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OM protein - protein search, using sw model

Run on: March 28, 2005, 16:30:33 ; Search time 72 Seconds
(without alignments)
145.035 Million cell updates/sec

Title: US-09-787-082A-12
Perfect score: 150
Sequence: 1 CKSXGSSCSXTSYNCRSCNXYTKRCY 27

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2105692 seqs, 386760381 residues

Total number of hits satisfying chosen parameters: 2105692

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 50 summaries

Database : A Genesep16Dec04:*
1: Genesep1980s:*
2: Genesep1990s:*
3: Genesep2000s:*
4: Genesep2001s:*
5: Genesep2002s:*
6: Genesep2003as:*
7: Genesep2003bs:*
8: Genesep2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	144	96.0	27	2 AAR32779	GVIA omeg
2	144	96.0	27	2 AAW12969	Omega con
3	144	96.0	27	3 AAY56475	Natural o
4	144	96.0	27	3 AAY43716	Amino aci
5	141	94.0	27	2 AAR39610	GVIA/SNX1
6	141	94.0	27	2 AAR37754	GVIA/SNX-
7	141	94.0	27	2 AAR76091	Omega con
8	141	94.0	27	2 AAW19546	Natural o
9	141	94.0	27	2 AAW72607	Conus gen
10	141	94.0	27	2 AAW95566	Omega-con
11	141	94.0	27	2 AAY42337	Omega-con
12	141	94.0	27	3 AAB14354	Omega-con
13	141	94.0	27	4 AAB98074	Conotoxin
14	141	94.0	27	5 AAB19444	Primary s
15	141	94.0	27	5 AAO15122	Cone snai
16	141	94.0	73	2 AAR38796	Conotoxin
17	141	94.0	73	5 ABB96642	Omega-con
18	136	90.7	27	5 ABB96848	Omega-con
19	136	90.7	27	5 ABB96640	Omega-con
20	135	90.0	27	2 AAR51035	N-type ca
21	121	80.7	26	5 ABB96747	Omega-con
22	121	80.7	27	5 ABB96745	Omega-con
23	121	80.7	28	5 ABB96746	Omega-con
24	120	80.0	27	2 AAR32783	GVIA omeg
25	120	80.0	27	2 AAW12973	Omega con

26	120	80.0	27	3 AAY56479	Natural o
27	117	78.0	27	2 AAR39614	TVIA/SNX1
28	117	78.0	27	2 AAR37759	TVIA/SNX-
29	117	78.0	27	2 AAR76095	Omega con
30	117	78.0	27	2 AAW19550	Natural o
31	117	78.0	27	2 AAW72611	Conus gen
32	117	78.0	27	2 AAW95570	Omega-con
33	117	78.0	27	2 AAY42340	Omega-con
34	117	78.0	27	3 AAB14358	Omega-con
35	117	78.0	27	4 AAB19448	Primary s
36	117	78.0	73	5 ABB96688	Omega-con
37	116	77.3	27	5 ABB96743	Omega-con
38	115.5	77.0	24	4 AAB92218	Toxin pep
39	114	76.0	27	2 AAR38517	Omega-con
40	112	74.7	30	5 ABB96856	Omega-con
41	112	74.7	75	5 ABB96653	Omega-con
42	111	74.0	27	2 AAR12543	Omega con
43	109	72.7	27	2 AAW12986	Omega con
44	109	72.7	27	3 AAY56497	Analogue
45	109	72.7	27	3 AAB14371	Omega-con
46	108	72.0	27	2 AAW12996	Omega-con
47	108	72.0	27	2 AAW72627	Conus gen
48	108	72.0	27	3 AAY56498	Analogue
49	108	72.0	27	3 AAB14378	Omega-con
50	108	72.0	27	4 AAB19464	Sequence

ALIGNMENTS

RESULT 1
AAR32779
ID AAR32779 standard; peptide; 27 AA.
XX
AC AAR32779;
XX
DT 28-JUN-1993 (first entry)
XX
DE GVIA omega conotoxin peptide.
XX
KW OCT; neuronal damage reduction; ischemia; secondary damage; stroke.
XX
OS Synthetic.
XX
PN US5189020-A.
XX
PD 23-FEB-1993.
XX
PF 02-AUG-1990; 90US-00561766.
XX
PR 22-NOV-1989; 89US-00440094.
XX
PA (NEUR-) NEUREX CORP.
XX
PI Miljanich GP, Bitner RS, Bowersox SS, Fox JA, Valentino KL;
PI Yamashiro DH, Tsubokawa M;
XX
WPI; 1993-085564/10.
XX
PT Reducing neuronal damage due to ischaemia - involves using omega
PT conotoxin peptide or fragment.
XX
PS Disclosure; Fig 1; 32pp; English.
XX
CC The sequence is that of the GVIA omega conotoxin (OCT) peptide which can
CC bind to an OCT binding protein, inhibit voltage-gated calcium currents
CC selectively in neuronal tissue and inhibit neuronal transmitter release
CC selectively in neuronal tissue. These properties all occur within the
CC range of those of MVIB, GVIA, RVIA, or pref. MVIA and GVIA OCTs. The
CC peptide can be used in reducing or preventing both anatomical and
CC functional secondary damage related to ischemia, generally as associated
CC with stroke
XX

SQ Sequence 27 AA;

Query Match 96.0%; Score 144; DB 2; Length 27;
 Best Local Similarity 100.0%; Pred. No. 5e-10;
 Matches 27; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKSXGSSCSXTSYNCCRCSCNXYTKRCY 27
 |||||
 Db 1 CKSXGSSCSXTSYNCCRCSCNXYTKRCY 27

RESULT 2

AAW12369

ID AAW12969 standard; peptide; 27 AA.

AC AAW12969;

XX 25-MAR-2003 (revised)

DT 22-APR-1997 (first entry)

XX Omega conopeptide SNX-124.

DE Omega conopeptide SNX-124.

XX Omega conopeptide; analgesic; treatment; neuropathic pain; inhibition;

KW neuronal damage; schizophrenia; tardive dyskinesia; analgesia;

KW acute dystonic reactions; inflammation; epilepsy.

XX Synthetic.

OS Synthetic.

XX Key

FH Modified-site 4 Location/Qualifiers

FT /label= Hyp

FT Modified-site 10

FT /label= Hyp

FT Modified-site 21

FT /label= Hyp

XX US587454-A.

PN 24-DEC-1996.

XX 15-APR-1993; 93US-00049794.

XX 30-DEC-1991; 91US-00814759.

PR 30-DEC-1992; 92WO-US011349.

XX (NEUR-) NEUREX CORP.

XX Gohil KC, Miljanich GP, Valentino KL, Justice A, Singh T;

PI WPI; 1997-064830/06.

XX Omega conopeptide(s) - useful as analgesics, esp. for treating

PT neuropathic pain.

XX Disclosure; Col 41-42; 58pp; English.

PS The present peptide is an omega conopeptide, useful as an analgesic,

XX especially for treating neuropathic pain. The peptide, which can be

CC prepared by solid phase synthesis, can also be used to inhibit neuronal

CC damage and treat schizophrenia, tardive dyskinesia, acute dystonic

CC reactions, inflammation and epilepsy. (Updated on 25-MAR-2003 to correct

CC PF field.)

XX Sequence 27 AA;

SQ Query Match 96.0%; Score 144; DB 2; Length 27;

Best Local Similarity 100.0%; Pred. No. 5e-10;

Matches 27; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKSXGSSCSXTSYNCCRCSCNXYTKRCY 27

|||||

Db 1 CKSXGSSCSXTSYNCCRCSCNXYTKRCY 27

RESULT 3

AAW56475

ID AAY56475 standard; peptide; 27 AA.

XX AAY56475;

AC AAY56475;

XX 16-FEB-2000 (first entry)

DT Natural omega conopeptide GVIA/SNX-124.

XX Omega conopeptide; analgesic; nociceptive; neuropathic; pain; conotoxin;

KW marine snail; peptide toxin; inflammation; binding;

KW voltage-gated calcium channel; inhibition; norepinephrine; noradrenaline;

KW anti-inflammatory.

XX Conus sp.

OS Conus sp.

XX Key

FH Misc-difference 4 Location/Qualifiers

FT /note= "unspecified"

FT Misc-difference 10

FT /note= "unspecified"

FT Misc-difference 21

FT /note= "unspecified"

XX US5994305-A.

PN 30-NOV-1999.

XX 21-AUG-1998; 98US-00138439.

XX 30-DEC-1991; 91US-00814759.

PR 15-APR-1993; 93US-00049794.

PR 03-JUL-1996; 96US-00675354.

PR 01-NOV-1996; 96US-00742774.

XX (ELAN-) ELAN PHARM INC.

XX Justice A, Singh T, Valentino KL, Miljanich GP, Gohil KC;

PI WPI; 2000-038270/03.

XX Measuring the activity of test compounds in blocking voltage-gated

XX calcium channels, binding to the omega conopeptide binding site and

XX inhibiting norepinephrine (noradrenaline) release for treating

XX inflammation.

XX Disclosure; Fig 1; 47pp; English.

PS A method has been developed of selecting a test compound for treating

XX inflammation. The method comprises measuring the activity of the test

XX compound in blocking voltage-gated calcium channels, binding to the omega

XX conopeptide binding site and inhibiting norepinephrine (noradrenaline)

XX release from nervous tissue. The method is useful for selecting compounds

XX for treating inflammation. The selected compounds are capable of

XX producing analgesia in a mammalian subject with chronic or intractable

XX pain. Analgesia caused by selected compounds may reduce the reliance on

XX opioid analgesic agents of the prior art which cause dependency and

XX tolerance, requiring potentially dangerous increases in opioid doses to

XX achieve the analgesic effect. The present sequence represents an omega

XX conopeptide given in the present invention

XX Sequence 27 AA;

SQ Query Match 96.0%; Score 144; DB 3; Length 27;

Best Local Similarity 100.0%; Pred. No. 5e-10;

Matches 27; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKSXGSSCSXTSYNCCRCSCNXYTKRCY 27

|||||

Db 1 CKSXGSSCSXTSYNCCRCSCNXYTKRCY 27

RESULT 4

AA43716
ID AAY43716 standard; peptide; 27 AA.

XX AC AAY43716;
XX DT 11-FEB-2000 (first entry)

XX DE Amino acid sequence of an omega-conotoxin GVIA.

XX KW Omega-conotoxin; venom; predatory marine snail; N-type calcium channel;
XX KW neuronal damage reduction; ischemia; analgesia; opiate analgesia;
KW schizophrenia; stimulant induced psychosis; hypertension; inflammation;
KW bronchotension; neuropathic pain; voltage sensitive calcium channel.

XX OS Conus geographus.

XX FH Key Location/Qualifiers
FT Modified-site 4
FT /label= Hyp
FT /note= "4-hydroxy proline"
FT Modified-site 10
FT /label= Hyp
FT /note= "4-hydroxy proline"
FT Modified-site 21
FT /label= Hyp
FT /note= "4-hydroxy proline"

XX WO9954350-A1.

XX PD 28-OCT-1999.

XX PF 16-APR-1999; 99WO-AU000288.

XX PR 16-APR-1998; 98AU-00002989.

XX PR 01-FEB-1999; 99AU-00008419.

XX PA (UYQU) UNIV QUEENSLAND.

XX PI Drinkwater RD, Lewis RJ, Alewood PF, Nielsen KJ;

XX DR WPI; 2000-013226/01.

XX PT Novel peptides used for the treatment of disorders and diseases where
PT blockage of the N-type calcium channels is required.

XX PS Disclosure; Page 13; 81pp; English.

XX CC The present sequence represents an omega-conotoxin. Omega-conotoxins are
CC isolated from venoms of predatory marine snails, and have a selectivity
CC for N-type calcium channels over P/Q type channels, and so block N-type
CC calcium channels. The omega-conotoxins of the invention can be used in
CC any disease or disorder where blockage of N-type calcium channels is
CC required, e.g. in the reduction of neuronal damage following ischemia,
CC production of analgesia, or enhancement of opiate analgesia, in the
CC treatment of schizophrenia, stimulant induced psychoses, hypertension,
CC inflammation, and diseases which cause bronchotension, and also in the
CC inhibition of progression of neuropathic pain. They can also be used in a
CC screen to identify compounds with activity at N-type voltage sensitive
CC calcium channels

XX SQ Sequence 27 AA;

Query Match 96.0%; Score 144; DB 3; Length 27;

Best Local Similarity 100.0%; Pred. No. 5e-10;

Matches 27; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKSXSXSSCSXTSYNCCSCNXYTKRCY 27

DB 1 CKSXSXSSCSXTSYNCCSCNXYTKRCY 27

RESULT 5

AAR39610
ID AAR39610 standard; peptide; 27 AA.

XX AC AAR39610;
XX DT 25-MAR-2003 (revised)

XX DT 20-DEC-1993 (first entry)

XX DE GVIA/SNX124.

XX KW Omega conopeptide; OCT; analgesia; inhibition; voltage-gated;
XX KW calcium channel; neuropeptide; contraction; guinea pig; ileum; MWIIA;
KW binding site; toxin; marine; snail; Conus; opiod; chronic pain;
KW narcotics.

XX OS Synthetic.

XX FH Key Location/Qualifiers
FT Disulfide-bond 1. .16
FT Modified-site 4
FT /note= "4Hyp"

FT Disulfide-bond 8. .19
FT Modified-site 10
FT /note= "4Hyp"

FT Disulfide-bond 15. .26
FT Modified-site 21
FT /note= "4Hyp"

XX WO9313128-A1.

XX PD 08-JUL-1993.

XX PF 30-DEC-1992; 92WO-US011349.

XX PR 30-DEC-1991; 91US-00814759.

XX PA (NEUR-) NEUREX CORP.

XX PI Justice A, Singh T, Gohil K, Valentino KL, Miljanich GP;

XX DR WPI; 1993-227270/28.

XX PT Use of omega-cono-peptide(s) which selectively inhibit voltage-gated
PT calcium channels - to induce analgesia, enhance opiate analgesics, treat
PT pain etc.

XX PS Claim 1; Fig 1; 90pp; English.

XX CC The sequences given in AAR39608-30 are omega conopeptides (OCTs) and
CC derivatives of these, which may be used to produce analgesia in a mammal.
CC These OCTs inhibit voltage-gated calcium channels selectively in neuronal
CC tissue. This is shown by the peptides ability to stimulate contraction in
CC guinea pig ileum and to bind to OCT MWIIA binding sites present in
CC neuronal tissue. OCTs are components of peptide toxins derived from
CC marine snails of the genus Conus, and act as calcium channel blockers.
CC These OCTs may be used to replace opiods in the treatment of chronic pain
CC or to reduce the opiod dosage required. This helps to reduce dependence
CC on and tolerance to opiod narcotics. (Updated on 25-MAR-2003 to correct
CC PN field.)

XX SQ Sequence 27 AA;

Query Match 94.0%; Score 141; DB 2; Length 27;

Best Local Similarity 88.9%; Pred. No. 1.1e-09;

Matches 24; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CKSXSXSSCSXTSYNCCSCNXYTKRCY 27

DB 1 CKSXSXSSCSXTSYNCCSCNXYTKRCY 27

RESULT 6

AAR37754
 ID AAR37754 standard; peptide; 27 AA.
 XX
 AC AAR37754;
 XX
 DT 25-MAR-2003 (revised)
 DT 08-SEP-1993 (first entry)
 XX
 DE GVIA/SNX-124.
 XX
 KW Ischaemia; neuronal; omega-conotoxin; OCT; MVIIA; MVIIIC; MVIID; MVIIB;
 GVIA; GVIIA; RVIA; SVIA; TVIA; SVIB; SNX-207; stroke; delayed treatment;
 KW antihistamine; blood pressure; N-type voltage-gated Ca currents;
 KW N-channel mediated neurotransmitter release.
 XX
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Disulfide-bond 1..16
 FT Modified-site 4
 FT /note= "hydroxyproline"
 FT Disulfide-bond 8..19
 FT Modified-site 10
 FT /note= "hydroxyproline"
 FT Disulfide-bond 15..26
 FT Modified-site 21
 FT /note= "hydroxyproline"
 FT
 FT
 XX W09310145-A1.
 PN
 XX
 PD
 XX
 XX 27-MAY-1993. 92WO-US009766.
 PF 12-NOV-1992;
 XX 12-NOV-1991; 91US-00789913.
 PR 17-JUL-1992; 92US-00916478.
 XX
 XX (NEUR-) NEUREX CORP.
 XX
 XX Miljanich GP, Bowersox SS, Fox JA, Valentino KL, Bitner RS;
 PI Yamashiro DH;
 XX
 XX WPI; 1993-182487/22.
 DR
 XX
 XX Redn. of neuronal damage caused by ischaemia - by admin. of cpds. that
 PT bind specifically to omega-conotoxin MVIIA binding sites.
 XX
 XX Disclosure; Fig 1; 103pp; English.
 PS
 CC Ischaemia-related neuronal damage in mammals is reduced by admin., 4-24
 CC hr after onset of ischaemia, of a cpd. (I) which binds selectively to an
 CC omega-conotoxin (OCT) MVIIA site in neuronal tissue. (I) has selectivity
 CC at least 100 expressed as ratio of binding affinity for the MVIIA site to
 CC that for the MVIIC site. (I) is one of the OCTs MVIIA, MVIIB, GVIA, GVIIA
 CC or RVIA or it is the cpd. SNX-207. (I) is esp. used to reduce neuronal
 CC damage caused by stroke. By delaying admin. for some time (compare
 CC US5051403 where cpds. are given within 1 hr of the onset of ischaemia) a
 CC greater redn. in neuronal damage is achieved. (I) is admin. e.g. by
 CC intracerebroventricular (ICV) injection at 0.1-20 microg/kg, but can also
 CC be given i.v. (opt. after treatment with antihistamines to minimise redn.
 CC in blood pressure caused by (I)). (I) is also at least as effective as
 CC the specified conotoxins for (1) selective inhibition of N-type voltage-
 CC gated Ca currents in neuronal tissue and (2) selective inhibition of N-
 CC channel mediated neurotransmitter release in neuronal tissue. Primary
 CC sequences of omega-conopeptides are given in AAR37752-62. Several analog
 CC omega-conopeptides are given in AAR37763-76. (Updated on 25-MAR-2003 to
 CC correct PN field.)
 XX
 XX Sequence 27 AA;
 SQ
 Query Match 94.0%; Score 141; DB 2; Length 27;
 Best Local Similarity 88.9%; Pred. No. 1.1e-09;
 Matches 24; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CKSXGSCSXTSYNCRSCSNXYTKRCY 27
 |||||
 Db 1 CKSPGSSCSPTSYNCRSCSNPYTKRCY 27
 |||||
 RESULT 7
 AAR76091
 ID AAR76091 standard; peptide; 27 AA.
 XX
 AC AAR76091;
 XX
 DT 27-AUG-2003 (revised)
 DT 25-MAR-2003 (revised)
 DT 02-FEB-1996 (first entry)
 XX
 DE Omega conotoxin GVIA peptide.
 XX
 KW Omega conotoxin; marine snail; Conus; voltage-gated Ca channel blocker;
 KW synaptosome; membrane; fish electric organ; mammalian brain; ischaemia;
 KW binding protein; binding affinity; stroke.
 XX
 OS Conus.
 XX
 FH Key Location/Qualifiers
 FT Disulfide-bond 1..16
 FT Modified-site 4
 FT /label= 4-Hyp
 FT Disulfide-bond 8..19
 FT Modified-site 10
 FT /label= 4-Hyp
 FT Disulfide-bond 15..26
 FT Modified-site 21
 FT /label= 4-Hyp
 FT Modified-site 27
 FT /note= "amidated C-terminus"
 XX
 XX US5424218-A.
 PN
 XX 13-JUN-1995.
 PD
 XX
 XX 04-NOV-1993; 93US-00147714.
 PF
 XX 22-NOV-1989; 89US-00440094.
 PR 02-AUG-1990; 90US-00561766.
 PR 23-MAR-1992; 92US-00855269.
 XX
 XX (NEUR-) NEUREX CORP.
 XX
 XX Valentino KL, Bowersox SS, Bitner RS, Miljanich GP, Yamashiro DH;
 PI Fox JA;
 XX
 XX WPI; 1995-223694/29.
 DR
 XX
 XX Identifying cpds. able to reduce neuronal damage caused by ischaemia - by
 PT measuring their affinity to omega conotoxin MVIIA binding site and
 PT ability e.g. to inhibit voltage gated calcium channels.
 XX
 XX Disclosure; Fig 1; 31pp; English.
 PS
 CC The peptides AAR76089-95 are naturally occurring omega conotoxin (OCT)
 CC peptides derived from marine snails of the Conus genus. The peptide
 CC sequences were used to chemically synthesise the OCT peptide fragments
 CC AAR76096-RV6109. The OCT peptides act as voltage-gated Ca channel
 CC blockers by binding to a 210 kD protein from synaptosomal membrane
 CC preparations from fish electric organ or mammalian brains. The peptides
 CC and their synthesised fragments can be used to screen for compounds that
 CC bind to the OCT binding protein, by displacing a high affinity labelled
 CC OCT, such as MVIIB, from a synaptosomal membrane preparation. The
 CC compounds should have binding affinities and activities at least equal to
 CC those of the natural peptides (Ki 0.44-324 nM). The screened compounds
 CC are potentially useful in treating ischaemic conditions, esp. stroke, and
 CC can reduce sec. anatomical and functional damage associated with those

CC conditions. (Updated on 25-MAR-2003 to correct PF field.) (Updated on 27-
 CC AUG-2003 to correct OS field.)
 XX
 SQ Sequence 27 AA;

Query Match 94.0%; Score 141; DB 2; Length 27;
 Best Local Similarity 88.9%; Pred. No. 1.1e-09;
 Matches 24; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CKSXGSSCSXTSYNCCRSNXYTKRCY 27
 ||||| ||||| ||||| ||||| |||||
 Db 1 CKSPGSSCSPTSYNCCRSNPNYTKRCY 27
 ||||| ||||| ||||| ||||| |||||

RESULT 8
 AAW19546
 ID AAW19546 standard; peptide; 27 AA.
 XX
 AC AAW19546;
 XX
 XX 27-AUG-2003 (revised)
 DT 10-OCT-1997 (first entry)
 XX
 DE Natural omega-conopeptide GVIA/SNX-124 used for pain relief.
 XX
 XX Conopeptide; cone snail; pain; analgesic; neuropathy; epidural;
 KW N-type voltage-sensitive calcium channel; block; Conus.
 XX
 OS Conus.
 XX
 XX
 FH Key Location/Qualifiers
 FT Misc-difference 4
 FT /label= 4Hyp
 FT Misc-difference 10
 FT /label= 4Hyp
 FT Misc-difference 21
 FT /label= 4Hyp
 XX
 XX WO9701351-A1.
 PN
 XX
 XX 16-JAN-1997.
 XX
 XX 26-JUN-1996; 96WO-US011041.
 XX
 XX 27-JUN-1995; 95US-00496847.
 PR 08-MAR-1996; 96US-00613400.
 XX
 XX (NEUR-) NEUREX CORP.
 PA
 XX Amstutz GA, Bowersox SS, Gohil K, Adriaenssens PI, Kristipati R;
 PI Gadbois T, Pettus MR, Luther RR;
 XX
 XX WPI; 1997-100012/09.
 DR
 XX
 XX Stable omega conopeptide compositions - for producing analgesia and for
 PT inhibiting progression of neuropathic pain disorders.
 XX
 XX Disclosure; Fig 1; 47pp; English.
 PS
 XX
 XX AAW19544-W19553 are naturally occurring omega conopeptides (OCs) isolated
 CC from Conus sp. (cone snails). The peptides and their analogues are used
 CC as analgesics acting by blocking N-type voltage-sensitive calcium
 CC channels. The OCs can be used to treat neuropathic pain as a result of
 CC e.g. insult to the spinal cord or peripheral nerves, cancer, bone
 CC degenerative diseases, AIDS, reflex sympathetic dystrophy, herpes zoster
 CC neuropathy, diabetic neuropathy, hyperesthesia, allodynia or
 CC hyperalgesia. The OCs are preferably administered in a medicament via an
 CC epidural route in a continuous infusion or sustained release formulation.
 CC The OCs can provide pain relief when administered epidurally in the
 CC absence of a permeation enhancer, at doses that are comparable to
 CC effective analgesic doses using intrathecal administration. OC
 CC formulations comprising an OC and a carboxylic acid buffer anti-oxidant.
 CC They also confer stability to solutions containing them for prolonged

CC treatment methods and long-term storage. (Updated on 27-AUG-2003 to
 CC correct OS field.)
 XX
 SQ Sequence 27 AA;

Query Match 94.0%; Score 141; DB 2; Length 27;
 Best Local Similarity 88.9%; Pred. No. 1.1e-09;
 Matches 24; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CKSXGSSCSXTSYNCCRSNXYTKRCY 27
 ||||| ||||| ||||| ||||| |||||
 Db 1 CKSPGSSCSPTSYNCCRSNPNYTKRCY 27
 ||||| ||||| ||||| ||||| |||||

RESULT 9
 AAW72607
 ID AAW72607 standard; peptide; 27 AA.
 XX
 AC AAW72607;
 XX
 XX 27-AUG-2003 (revised)
 DT 06-JAN-1999 (first entry)
 XX
 DE Conus genus natural omega-conopeptide GVIA/SNX-124.
 XX
 XX Conus genus; marine snail; cone snail; omega-conopeptide; analgesia;
 KW nociceptive pain; neuropathic pain; neuronal tissue; conotoxin;
 KW inflammation; schizophrenia; tardive dyskinesia; acute dystonic reaction;
 KW rheumatoid arthritis; epilepsy.
 XX
 OS Conus.
 XX
 XX
 FH Key Location/Qualifiers
 FT Modified-site 4
 FT /label= Hyp
 FT /note= "hydroxyproline"
 FT Modified-site 10
 FT /label= Hyp
 FT /note= "hydroxyproline"
 FT Modified-site 21
 FT /label= Hyp
 FT /note= "hydroxyproline"
 XX
 XX US5824645-A.
 PN
 XX
 XX 20-OCT-1998.
 XX
 XX 01-NOV-1996; 96US-00742774.
 XX
 XX 30-DEC-1991; 91US-00814759.
 PR 15-APR-1993; 93US-00049794.
 PR 03-JUL-1996; 96US-00675354.
 XX
 XX (NEUR-) NEUREX CORP.
 PA
 XX Miljanich GP, Valentino KL, Gohil KC, Justice A, Singh T;
 PI
 XX WPI; 1998-582596/49.
 DR
 XX
 XX Treatment of inflammation, comprises administration of omega-conopeptide
 PT - effective to block voltage-gated calcium channels, bind with high
 PT affinity to omega-conopeptide binding site, and inhibit neurotransmitter
 PT release.
 XX
 XX Disclosure; Fig 1; 58pp; English.
 PS
 XX A method has been developed for the treatment of inflammation in a
 CC subject. The method comprises administration of an omega-conopeptide
 CC effective to: (i) block voltage-gated calcium channels; (ii) bind with
 CC high affinity to an omega-conopeptide binding site; and (iii) inhibit
 CC neurotransmitter release from nervous tissue. The method is used to treat
 CC inflammation and associated pain. The treatment can also be used to
 CC produce analgesia (especially in subjects experiencing neuropathic pain);


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CC by the cone snails, and which act as calcium channel blockers. Natural
CC omega-conopeptides and their derivatives may be useful for producing
CC analgesia in nociceptive and neuropathic pain. The peptides bind to omega
CC -conopeptide binding sites, which are present mainly in neuronal tissue,
CC and inhibit norepinephrine release from nervous tissue. Conopeptides such
CC as WVIA and TVIA are effective as therapeutic agents for treating
CC neurogenic conditions such as schizophrenia, tardive dyskinesia and acute
CC dystonic reactions, inflammation and epilepsy
XX
XX Sequence 27 AA;
Query Match          94.0%; Score 141; DB 3; Length 27;
Best Local Similarity 88.9%; Pred.No. 1.le-09;
Matches 24; Conservative 0; Mismatches 3; Indels 0; Gaps 0
QY      1 CKSXGSSCSXTSYNCCRSCNXYTKRCY 27
       ||| |||| | |||| |||| |||| ||||
Db      1 CKSPGSSCPTSYNCCRSCNPYTKRCY 27
RESULT 13
AAB98074
ID ID AAB98074 standard; peptide; 27 AA.
AC AC AAB98074;
XX XX
XX DT DT
XX DE DE
XX DE DE
XX KW Mouse; N-calcium channel alpha 1B subunit; blood pressure control;
KW N-calcium channel knockout animal; blood glucose level control;
XX pain transfer; hypotensive; analgesic.
XX KW
XX OS Conus geographus.
XX FH
FH Location/Qualifiers
FT Modified-site 4 /note= "hydroxyproline"
FT FT 10
FT Modified-site 10 /note= "hydroxyproline"
FT FT 21
FT Modified-site 21 /note= "hydroxyproline"
XX WO200130137-A1.
PN PN
XX PD
PD 03-MAY-2001.
XX PF
PF 26-OCT-2000; 2000WO-JP007503.
XX PR
PR 26-OCT-1999; 99JP-00303809.
PR 16-FEB-2000; 2000JP-00037839.
PR 31-AUG-2000; 2000JP-00261979.
XX PA
PA (SISA ) EISAI CO LTD.
XX PI Ino M, Miyamoto N, Takahashi E, Oki T, Yoshinaga T, Hatakeyama S;
PI Niidome T, Sawada K, Nishizawa Y, Tanaka I;
XX DR
DR WPI; 2001-300406/31.
XX PT
PT For new calcium channel deficient non-human animals useful for screening
XX PS of new drugs.
XX Disclosure; Page 56; 64pp; Japanese.
XX CC
XX The present invention describes an N-type calcium channel deficient non-
CC human animal whose gene for the calcium channel has been disrupted. The
CC gene that is disrupted encodes the N-type calcium channel alpha 1B
CC subunit. Also described are: (1) a method for assaying usefulness of
CC substances using the animal; (2) a method for screening for substances
CC with potential pharmacological use; (3) useful substances found by the
CC method; and (4) a method for producing pharmaceuticals using this method
```

CC (specifically methods for producing a hypotensive drug, a pain killer and
 CC a drug for lowering blood sugar and the substances themselves). The N-
 CC type calcium channel deficient non-human animal can be used for screening
 CC substances for pharmaceutical use. Active substances include a
 CC hypotensive drug, a pain killer and a drug for lowering blood sugar. The
 CC present sequence represents the Conus geographus conotoxin GVIA peptide
 CC which is given in the exemplification of the present invention
 XX Sequence 27 AA;
 SQ

Query Match 94.0%; Score 141; DB 4; Length 27;
 Best Local Similarity 88.9%; Pred. No. 1.1e-09;
 Matches 24; Conservative 0; Mismatches 3; Indels 0; Gaps 0;
 XX

OY 1 CKSXGSSCSXTSYNCRSCNXYTKRCY 27
 DB 1 CKSPGSSCSPTSYNCRSCNPNYTKRCY 27

RESULT 14
 AAB19444
 ID AAB19444 standard; peptide; 27 AA.
 XX
 AC AAB19444;
 XX
 DT 06-MAR-2001 (first entry)
 XX
 DE Primary sequence of a natural omega-conopeptide GVIA/SNX-124.
 XX
 KW Omega-conopeptide; voltage-gated calcium channel inhibitor; analgesic;
 KW peptide toxin; opiate; pain; neuronal damage; ischemic condition;
 KW schizophrenia; tardive dyskinesia; acute dystonic reaction; inflammation;
 KW epilepsy.
 XX
 OS Conus sp.
 XX

Key Location/Qualifiers
 FH Disulfide-bond 1..16
 FT Modified-site 4
 FT /label= Hyp
 FT /note= "hydroxyproline"
 FT Disulfide-bond 8..19
 FT Modified-site 10
 FT /label= Hyp
 FT /note= "hydroxyproline"
 FT Disulfide-bond 15..26
 FT Modified-site 21
 FT /label= Hyp
 FT /note= "hydroxyproline"
 FT Modified-site 27
 FT /note= "amidated C-terminal"
 XX

US6136786-A.
 PN
 XX
 PD 24-OCT-2000.
 XX
 XX 09-SEP-1999; 99US-00392979.
 XX
 PR 30-DEC-1991; 91US-00814759.
 PR 15-APR-1993; 93US-00049794.
 PR 23-JUN-1993; 93US-00081863.
 PR 03-JUL-1996; 96US-00675354.
 PR 01-NOV-1996; 96US-00742774.
 PR 21-AUG-1998; 98US-00138439.
 PR 23-APR-1999; 99US-00298017.
 XX (ELAN-) ELAN PHARM INC.
 XX
 XX Singh T, Gohil KC, Valentino KL, Miljanich GP, Justice A;
 XX WPI; 2001-030946/04.
 DR
 XX Enhancing analgesia produced by opiates by administering an omega-

PT conopeptide that inhibits electrically stimulated contraction of guinea
 PT pig ileum and binds to omega-conopeptide MVIIA binding sites in neuronal
 PT tissues.
 XX
 PS Disclosure; Fig 1; 58pp; English.
 XX
 CC The present sequence represents an omega-conopeptide. Omega-conopeptides
 CC are components of peptide toxins which act as voltage-gated calcium
 CC channel inhibitors. The peptides are used to enhance the analgesic effect
 CC produced by an opiate in a mammalian subject. The method comprises
 CC administering to the subject an omega-conopeptide which is able to
 CC inhibit electrically stimulated contraction of the guinea pig ileum and
 CC bind to omega-conopeptide MVIIA binding sites present in neuronal tissue.
 CC Omega-conopeptides are useful for enhancing the analgesic effect produced
 CC by an opiate. Omega-conopeptides may also be used in the treatment of
 CC pain, in reducing neuronal damage related to an ischemic condition in
 CC mammals, and in treating schizophrenia, tardive dyskinesia and acute
 CC dystonic reactions, inflammation and epilepsy
 XX
 SQ Sequence 27 AA;
 Query Match 94.0%; Score 141; DB 4; Length 27;
 Best Local Similarity 88.9%; Pred. No. 1.1e-09;
 Matches 24; Conservative 0; Mismatches 3; Indels 0; Gaps 0;
 XX

OY 1 CKSXGSSCSXTSYNCRSCNXYTKRCY 27
 DB 1 CKSPGSSCSPTSYNCRSCNPNYTKRCY 27

RESULT 15
 AAO15122
 ID AAO15122 standard; peptide; 27 AA.
 XX
 AC AAO15122;
 XX
 DT 22-AUG-2002 (first entry)
 XX
 DE Cone snail w-conotoxin peptide GVIA.
 XX
 KW Cone snail; venomous saliva; calcium channel blocking activity;
 KW stenocardia; hypertension; myocarditis; arrhythmia; cerebral ischaemia;
 KW w-conotoxin.
 XX
 OS Conus sp.
 XX
 PN JP2002080499-A.
 XX
 PD 19-MAR-2002.
 XX
 PF 01-SEP-2000; 2000JP-00266187.
 XX
 PR 01-SEP-2000; 2000JP-00266187.
 XX (SUNR) SUNTORY LTD.
 XX
 XX WPI; 2002-421068/45.
 XX
 PT A new peptide derived from venomous saliva of assassin bug, has calcium
 PT channel blocking activity.
 XX
 PS Disclosure; Page 4; 26pp; Japanese.
 XX
 CC The invention comprises peptides having calcium channel blocking
 CC activities which are derived from the venomous saliva of assassin bugs.
 CC The calcium channel blocking peptides of the invention are useful for
 CC treating stenocardia, hypertension, myocarditis, arrhythmia and cerebral
 CC ischaemia. The present amino acid sequence represents a cone snail w-
 CC conotoxin peptide
 XX
 SQ Sequence 27 AA;
 Query Match 94.0%; Score 141; DB 5; Length 27;

Best Local Similarity 88.9%; Pred. No. 1.1e-09;
Matches 24; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CKSXGSSCSXTSYNCCSCNXYTKRCY 27
DB 1 CKSPGSSCSPTSYNCCSCNPNYTKRCY 27

RESULT 16
AAR38796
ID AAR38796 standard; peptide; 73 AA.

XX AAR38796;
XX 22-FEB-1994 (first entry)
XX Conotoxin prepropeptide GVIA.
XX Calcium channel; four loop; toxin; MVIIB; Conus magus; GVIA; neurone;
KW C. geographus; conotoxin; presynaptic; specificity; calcium target;
KW cysteine; omega; framework; template domain.
XX Conus geographus.

PH Key Location/Qualifiers
FT Region 46..72
FT /note= "Mature omega-toxin"

XX US231011-A.
XX 27-JUL-1993.
XX 18-APR-1991; 91US-00689693.
XX 18-APR-1991; 91US-00689693.
XX (UTAH) UNIV UTAH.
XX Hillyard DR, Olivera BM;
XX WPI; 1993-249725/31.
XX Formation of cysteine-rich peptide of specified disulphide bonding -
PT involves forming pre-pro-peptide with N-terminal excised region which
PT acts as templates for directing disulphide bond formation in cysteine-
PT rich peptide.
XX Example 1; Col 8; 15pp; English.

XX The sequences given in AAR38795-96 represent two examples of calcium
CC channel four loop toxins. They are MVIIB from Conus magus and GVIA from
CC C. geographus. These conotoxins target presynaptic calcium channels and
CC have largely overlapping specificities for different calcium targets in
CC neuronal tissue preparations. These peptides form a four loop folded
CC toxin molecule with a specific arrangement of cysteines referred to as
CC the omega pattern. The cysteine framework of these two peptides differs
CC only in the exact amino acid spacing of the two carboxy terminal inter-
CC Cys domains. Beyond the similarity of the framework the two peptides are
CC remarkably divergent. Only nine of the 21 non-Cys amino acids of the
CC omega-GVIA are conserved in the omega-MVIIB. MVIIB and GVIA template
CC domains are each 45 amino acids in length. They also show a >90%
CC conservation of amino acid sequence with only 4 positions of amino acid
CC non-identity. These two sequences illustrate the existence of two highly
CC conserved template domains associated with two structurally dissimilar
CC toxins

SQ Sequence 73 AA;

Query Match 94.0%; Score 141; DB 2; Length 73;
Best Local Similarity 88.9%; Pred. No. 2.6e-09;
Matches 24; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CKSXGSSCSXTSYNCCSCNXYTKRCY 27

DB 46 CKSPGSSCSPTSYNCCSCNPNYTKRCY 72

RESULT 17
ABB96642
ID ABB96642 standard; peptide; 73 AA.
XX ABB96642;
XX 12-JUL-2002 (first entry)
XX Omega-conopeptide w-GVIA propeptide.

XX Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal cord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.

XX Conus geographus.

OS WO200207675-A2.

XX 31-JAN-2002.

XX 23-JUL-2001; 2001WO-US023041.

XX 21-JUL-2000; 2000US-0219616P.

PR 05-FEB-2001; 2001US-0265888P.

XX (UTAH) UNIV UTAH RES FOUND.

PA (COGN-) COGNETIX INC.

XX Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;

PI Jacobsen R, Jones RM, Cartier GE;

XX WPI; 2002-257318/30.

DR N-PSDB; ABL98901.

XX New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurologic or
PT cardiovascular disorders.

XX Claim 1(c); Page 44; 195pp; English.

XX The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of the
CC peptides of the invention may be described as, analgesic, anticonvulsant,
CC vasotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular,
CC antiinflammatory, antimigraine, antidiabetic, tranquiliser, vulnerary,
CC antipsychotic, anxiolytic and neuroleptic. Peptides of the invention act
CC by modulating the activity of voltage gated ion channels. They may be
CC used for treating or preventing disorders associated with voltage gated
CC ion channels such as neurological disorders, e.g. seizure (associated
CC with epilepsy), neurotoxic injury associated with conditions of hypoxia,
CC anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal
CC cord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic
CC events; pain e.g. migraine; inflammation or cardiovascular disorders.
CC They may also be used for treating psychiatric disorders e.g. psychosis,
CC anxiety or schizophrenia. The analgesic agents of the invention show
CC diminished side effects and toxicity, and are non-addictive. The
CC sequences given in records ABB96595-ABB96697 represent omega-conopeptide
CC propeptide sequences

XX Sequence 73 AA;

Query Match 94.0%; Score 141; DB 5; Length 73;
Best Local Similarity 88.9%; Pred. No. 2.6e-09;


```
XX SQ Sequence 73 AA;
Query Match 90.7%; Score 136; DB 5; Length 73;
Best Local Similarity 85.2%; Pred. No. 1e-08;
Matches 23; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKSXGSSCSXTSYNCCRSNCXYTKRCY 27
Db 46 CKSPGSSCSPTSYNCCRSNPNYAKRCY 72

RESULT 20
AAR51035
ID AAR51035 standard; peptide; 27 AA.
XX AC AAR51035;
XX DT 24-NOV-1994 (first entry)
XX OS N-type calcium channel affinity peptide.
XX FH Affinity; N-type; calcium channel; isolation; purification.
XX KW Synthetic.
XX OS Key Location/Qualifiers
FH Disulfide-bond 1..16 /label= 4Hyp
FT Modified-site 4
FT Disulfide-bond 8..19 /label= 4Hyp
FT Modified-site 10
FT Disulfide-bond 15..26 /label= 4Hyp
FT Modified-site 21
FT Modified-site 27 /label= 4Hyp
FT /note= "Amidated C-terminal"
XX PN JP06080696-A.
XX PD 22-MAR-1994.
XX PF 01-SEP-1992; 92JP-00255424.
XX PR 01-SEP-1992; 92JP-00255424.
XX PA (MITU ) MITSUBISHI KASEI CORP.
XX DR WPI; 1994-132043/16.
XX PT Peptide with affinity for N-type calcium channel - useful as agent for
XX PT isolation and purification of calcium channel.
XX PS Claim 1; Page 2; 4pp; Japanese.
XX CC This sequence represents a peptide which has affinity for an N-type
XX CC calcium channel. This peptide is preferably prepared by standard solid-
XX CC phase synthesis techniques and is useful as an agent for isolation and
XX CC purification of the calcium channel
XX SQ Sequence 27 AA;
Query Match 90.0%; Score 135; DB 2; Length 27;
Best Local Similarity 85.2%; Pred. No. 5.7e-09;
Matches 23; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKSXGSSCSXTSYNCCRSNCXYTKRCY 27
Db 1 CASPGSSCSPTSYNCCRSNPNYAKRCY 27

RESULT 21
```

```
ABB96747
XX ID ABB96747 standard; peptide; 26 AA.
XX AC ABB96747;
XX DT 12-JUL-2002 (first entry)
XX DE Omega-conopeptide w-GVIC generic toxin sequence.
XX KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
XX KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
XX KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
XX KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
XX KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
XX KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
XX KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
XX KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
XX KW psychosis; anxiety; schizophrenia.
XX OS Conus geographus.
XX FH Key Location/Qualifiers
FT Misc-difference 4 /label= OTHER
FT /note= "OTHER is Pro or Hydroxy Pro"
FT Misc-difference 10 /label= OTHER
FT /note= "OTHER is Pro or Hydroxy Pro"
FT Misc-difference 13 /label= OTHER
FT /note= "OTHER is Tyr, 125I-Tyr, mono-iodo-Tyr or di-iodo-
FT Tyr or O-sulpho-Tyr or O-Phospho-Tyr"
FT Misc-difference 21 /label= OTHER
FT /note= "OTHER is Pro or Hydroxy Pro"
FT Misc-difference 22 /label= OTHER
FT /note= "OTHER is Tyr, 125I-Tyr, mono-iodo-Tyr or di-iodo-
FT Tyr or O-sulpho-Tyr or O-Phospho-Tyr"
XX PN W0200207675-A2.
XX PD 31-JAN-2002.
XX PF 23-JUL-2001; 2001WO-US023041.
XX PR 21-JUL-2000; 2000US-0219616P.
XX PR 05-FEB-2001; 2001US-0265888P.
XX PA (UTAH ) UNIV UTAH RES FOUND.
XX PA (COGN-) COGNETIX INC.
XX PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
XX PI Jacobsen R, Jones RM, Cartier GE;
XX DR WPI; 2002-257318/30.
XX CC New omega-conopeptides useful for treating disorders associated with
XX CC voltage gated ion channels e.g. pain, inflammation, neurologic or
XX CC cardiovascular disorders.
XX PS Example 2; Page 44; 195pp; English.
XX CC The invention relates to isolated omega-conopeptides, nucleic acid
XX CC sequences encoding them, and propeptide sequences. The activity of the
XX CC peptides of the invention may be described as, analgesic, anticonvulsant,
XX CC vasotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular,
XX CC antiinflammatory, antimigraine, antidiabetic, tranquiliser, vulnerary,
XX CC antipsychotic, anxiolytic and neuroleptic. Peptides of the invention act
XX CC by modulating the activity of voltage gated ion channels. They may be
XX CC used for treating or preventing disorders associated with voltage gated
XX CC ion channels such as neurological disorders, e.g. seizure (associated
XX CC with epilepsy), neurotoxic injury associated with conditions of hypoxia,
```

CC anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal
 CC chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic
 CC events; pain e.g. migraine; inflammation or cardiovascular disorders.
 CC They may also be used for treating psychiatric disorders e.g. psychosis,
 CC anxiety or schizophrenia. The analgesic agents of the invention show
 CC diminished side effects and toxicity, and are non-addictive. The
 CC sequences given in records ABB96698-ABB96806 represent omega-conopeptide
 CC generic toxin sequences
 XX Sequence 26 AA;
 SQ

Query Match 80.7%; Score 121; DB 5; Length 26;
 Best Local Similarity 92.3%; Pred. No. 2.4e-07;
 Matches 24; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

OY 1 CKSXGSSCSXTSYNCCRSNCXYTKRC 26
 DB 1 CKSXGSSCSXTSYNCCRSNCXYTKRC 26
 |||||

RESULT 22
 ABB96745
 ID ABB96745 standard; peptide; 27 AA.
 AC ABB96745;
 XX
 DT 12-JUL-2002 (first entry)
 XX
 DE Omega-conopeptide w-GVIA generic toxin sequence.
 XX
 KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
 KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
 KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
 KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
 KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
 KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
 KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
 KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
 KW psychosis; anxiety; schizophrenia.
 XX
 OS Conus geographus.
 XX
 FH Key Location/Qualifiers
 FT Misc-difference 4 /label= OTHER
 FT Misc-difference 10 /note= "OTHER is Pro or Hydroxy Pro"
 FT Misc-difference 13 /note= "OTHER is Pro or Hydroxy Pro"
 FT Misc-difference 13 /label= OTHER
 FT Misc-difference 21 /note= "OTHER is Tyr, 125I-Tyr, mono-iodo-Tyr or di-iodo-Tyr or O-sulpho-Tyr or O-Phospho-Tyr"
 FT Misc-difference 21 /label= OTHER
 FT Misc-difference 22 /note= "OTHER is Pro or Hydroxy Pro"
 FT Misc-difference 22 /label= OTHER
 FT Misc-difference 27 /note= "OTHER is Tyr, 125I-Tyr, mono-iodo-Tyr or di-iodo-Tyr or O-sulpho-Tyr or O-Phospho-Tyr"
 FT Misc-difference 27 /label= OTHER
 FT Misc-difference 27 /note= "OTHER is Tyr, 125I-Tyr, mono-iodo-Tyr or di-iodo-Tyr or O-sulpho-Tyr or O-Phospho-Tyr"
 FT Misc-difference 27 /label= OTHER
 XX WO200207675-A2.
 PN
 XX
 XX 31-JAN-2002.
 PD
 XX
 XX 23-JUL-2001; 2001WO-US023041.
 PF
 XX 21-JUL-2000; 2000US-0219616P.
 XX
 PR 05-FEB-2001; 2001US-0265888P.

XX (UTAH) UNIV UTAH RES FOUND.
 PA (COGN-) COGNEXIX INC.
 XX
 XX Olivera B, McIntosh JM, Watkins M, Garrett JE, Shon K;
 PI Jacobsen R, Jones RM, Cartier GS;
 XX
 DR WPI; 2002-257318/30.
 XX
 XX New omega-conopeptides useful for treating disorders associated with
 PT voltage gated ion channels e.g. pain, inflammation, neurologic or
 PT cardiovascular disorders.
 XX
 XX Example 2; Page 44; 195pp; English.
 PS
 XX The invention relates to isolated omega-conopeptides, nucleic acid
 CC sequences encoding them, and propeptide sequences. The activity of the
 CC peptides of the invention may be described as, analgesic, anticonvulsant,
 CC vasotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular,
 CC antiinflammatory, antimigraine, antidiabetic, tranquiliser, vulnerary,
 CC antipsychotic, anxiolytic and neuroleptic. Peptides of the invention act
 CC by modulating the activity of voltage gated ion channels. They may be
 CC used for treating or preventing disorders associated with voltage gated
 CC ion channels such as neurological disorders, e.g. seizure (associated
 CC with epilepsy), neurotoxic injury associated with conditions of hypoxia,
 CC anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal
 CC chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic
 CC events; pain e.g. migraine; inflammation or cardiovascular disorders.
 CC They may also be used for treating psychiatric disorders e.g. psychosis,
 CC anxiety or schizophrenia. The analgesic agents of the invention show
 CC diminished side effects and toxicity, and are non-addictive. The
 CC sequences given in records ABB96698-ABB96806 represent omega-conopeptide
 CC generic toxin sequences
 XX Sequence 27 AA;
 SQ

Query Match 80.7%; Score 121; DB 5; Length 27;
 Best Local Similarity 92.3%; Pred. No. 2.5e-07;
 Matches 24; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

OY 1 CKSXGSSCSXTSYNCCRSNCXYTKRC 26
 DB 1 CKSXGSSCSXTSYNCCRSNCXYTKRC 26
 |||||

RESULT 23
 ABB96746
 ID ABB96746 standard; peptide; 28 AA.
 AC ABB96746;
 XX
 DT 12-JUL-2002 (first entry)
 XX
 DE Omega-conopeptide w-GVIB generic toxin sequence.
 XX
 KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
 KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
 KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
 KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
 KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
 KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
 KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
 KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
 KW psychosis; anxiety; schizophrenia.
 XX
 OS Conus geographus.
 XX
 FH Key Location/Qualifiers
 FT Misc-difference 4 /label= OTHER
 FT Misc-difference 10 /note= "OTHER is Pro or Hydroxy Pro"
 FT Misc-difference 10 /label= OTHER

FT Misc-difference 13 /note= "OTHER is Pro or Hydroxy Pro"

FT /label= OTHER

FT /note= "OTHER is Tyr, 125I-Tyr, mono-iodo-Tyr or di-iodo-

FT Tyr or O-sulpho-Tyr or O-Phospho-Tyr"

FT Misc-difference 21 /label= OTHER

FT /note= "OTHER is Pro or Hydroxy Pro"

FT Misc-difference 22 /label= OTHER

FT /note= "OTHER is Tyr, 125I-Tyr, mono-iodo-Tyr or di-iodo-

FT Tyr or O-sulpho-Tyr or O-Phospho-Tyr"

FT Misc-difference 27 /label= OTHER

FT /note= "OTHER is Tyr, 125I-Tyr, mono-iodo-Tyr or di-iodo-

FT Tyr or O-sulpho-Tyr or O-Phospho-Tyr"

PN WO200207675-A2.

PN 31-JAN-2002.

PD 23-JUL-2001; 2001WO-US023041.

PF 21-JUL-2000; 2000US-0219616P.

PR 05-FEB-2001; 2001US-0265888P.

XX (UTAH) UNIV UTAH RES FOUND.

PA (COGN-) COGNETIX INC.

XX Olivera BM, McIntosh JM, Watkins M, Garrett JB, Shon K;

XX Jacobsen R, Jones RM, Cartier GE;

XX WPI; 2002-257318/30.

DR New omega-conopeptides useful for treating disorders associated with

PT voltage gated ion channels e.g. pain, inflammation, neurologic or

PT cardiovascular disorders.

XX Example 2; Page 44; 195pp; English.

PS The invention relates to isolated omega-conopeptides, nucleic acid

XX sequences encoding them, and peptide sequences. The activity of the

CC peptides of the invention may be described as, analgesic, anticonvulsant,

CC vasotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular,

CC antiinflammatory, antimigraine, antidiabetic, tranquiliser, vulnerary,

CC antipsychotic, anxiolytic and neuroleptic. Peptides of the invention act

CC by modulating the activity of voltage gated ion channels. They may be

CC used for treating or preventing disorders associated with voltage gated

CC ion channels such as neurological disorders, e.g. seizure (associated

CC with epilepsy), neurotoxic injury associated with conditions of hypoxia,

CC anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal

CC chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic

CC events; pain e.g. migraine; inflammation or cardiovascular disorders.

CC They may also be used for treating psychiatric disorders e.g. psychosis,

CC anxiety or schizophrenia. The analgesic agents of the invention show

CC diminished side effects and toxicity, and are non-addictive. The

CC sequences given in records ABB96698-ABB96806 represent omega-conopeptide

XX generic toxin sequences

XX Sequence 28 AA;

Query Match 80.7%; Score 121; DB 5; Length 28;

Best Local Similarity 92.3%; Pred. No. 2.5e-07;

Matches 24; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 CKSXGSGCSXTSYNCCRSNCXYTKRC 26

DB 1 CKSXGSGCSXTSYNCCRSNCXYTKRC 26

RESULT 24

AAR32783

ID AAR32783 standard; peptide; 27 AA.

XX AAR32783;

XX 28-JUN-1993 (first entry)

XX TVIA omega conotoxin peptide.

DE OCT; neuronal damage reduction; ischemia; secondary damage; stroke.

XX Synthetic.

OS US5189020-A.

PN 23-FEB-1993.

XX 02-AUG-1990; 90US-00561766.

PF 22-NOV-1989; 89US-00440094.

PR (NEUR-) NEUREX CORP.

PA Miljanich GP, Bitner RS, Bowersox SS, Fox JA, Valentino KL;

XX Yamashiro DH, Teubokawa M;

PI WPI; 1993-085564/10.

DR Reducing neuronal damage due to ischaemia - involves using omega

XX conotoxin peptide or fragment.

PT Disclosure; Fig 1; 32pp; English.

PS The sequence is that of the TVIA omega conotoxin (OCT) peptide which can

XX bind to an OCT binding protein, inhibit voltage-gated calcium currents

CC selectively in neuronal tissue and inhibit neuronal transmitter release

CC range of those of MVIIB, GVIIA, RVIA, or pref. MVIIA and GVIA OCTs. The

CC peptide can be used in reducing or preventing both anatomical and

CC functional secondary damage related to ischemia, generally as associated

CC with stroke

XX Sequence 27 AA;

Query Match 80.0%; Score 120; DB 2; Length 27;

Best Local Similarity 84.6%; Pred. No. 3.2e-07;

Matches 22; Conservative 3; Mismatches 1; Indels 0; Gaps 0;

QY 1 CKSXGSGCSXTSYNCCRSNCXYTKRC 26

DB 1 CLSXGSGCSXTSYNCCRSNCXYTKRC 26

RESULT 25

AAW12973

ID AAW12973 standard; peptide; 27 AA.

XX AAW12973;

AC 25-MAR-2003 (revised)

DT 22-APR-1997 (first entry)

XX Omega conopeptide SNX-185.

DE Omega conopeptide; analgesic; treatment; neuropathic pain; inhibition;

XX neuronal damage; schizophrenia; tardive dyskinesia; analgesia;

KW acute dystonic reactions; inflammation; epilepsy.

XX Synthetic.

OS Key Location/Qualifiers

FT Modified-site 4 /label= Hyp

FT Modified-site 10 /label= Hyp

FT Modified-site 21 /label= Hyp
 FT US5587454-A.
 PN
 XX 24-DEC-1996.
 PD
 XX 15-APR-1993; 93US-00049794.
 XX
 XX 30-DEC-1991; 91US-00814759.
 PR 30-DEC-1992; 92WO-US011349.
 XX
 XX (NEUR-) NEUREX CORP.
 PA
 XX Gohil KC, Miljanich GP, Valentino KL, Justice A, Singh T;
 PI WPI; 1997-064830/06.
 DR
 XX Omega cono:peptide(s) - useful as analgesics, esp. for treating
 PT neuropathic pain.
 PT
 XX Disclosure; Col 45-46; 58pp; English.
 PS
 XX The present peptide is an omega conopeptide, useful as an analgesic,
 CC especially for treating neuropathic pain. The peptide, which can be
 CC prepared by solid phase synthesis, can also be used to inhibit neuronal
 CC damage and treat schizophrenia, tardive dyskinesia, acute dystonic
 CC reactions, inflammation and epilepsy. In a rat paw formalin test, the
 CC peptide had an ED50 of 0.043 microg in phase 1, and 0.041 microg in phase
 CC 2 (by intrathecal administration). (Updated on 25-MAR-2003 to correct PF
 CC field.)
 CC
 XX Sequence 27 AA;
 SQ

Query Match 80.0%; Score 120; DB 2; Length 27;
 Best Local Similarity 84.6%; Pred. No. 3.2e-07;
 Matches 22; Conservative 3; Mismatches 1; Indels 0; Gaps 0;

QY 1 CKXGSSCSXTSYNCCRCNXYTKRC 26
 DB 1 CLXGSSCSXTSYNCCRCNXYSRKC 26

RESULT 26
 AAY56479
 ID AAY56479 standard; peptide; 27 AA.
 XX
 AC AAY56479;
 XX
 DT 16-FEB-2000 (first entry)
 XX
 XX Natural omega conopeptide TVIA/SNX-185.
 DE
 XX Omega conopeptide; analgesic; nociceptive; neuropathic; pain; conotoxin;
 KW marine snail; peptide toxin; inflammation; binding;
 KW voltage-gated calcium channel; inhibition; norepinephrine; noradrenaline;
 KW anti-inflammatory.
 XX
 OS Conus sp.
 XX
 XX Key Location/Qualifiers
 FH Misc-difference 4 /note= "unspecified"
 FT Misc-difference 10 /note= "unspecified"
 FT Misc-difference 21 /note= "unspecified"
 FT
 XX US5994305-A.
 PN
 XX 30-NOV-1999.
 PD
 XX 21-AUG-1998; 98US-00138439.
 PF

XX 30-DEC-1991; 91US-00814759.
 PR 15-APR-1993; 93US-00049794.
 PR 03-JUL-1996; 96US-00675354.
 PR 01-NOV-1996; 96US-00742774.
 XX
 XX (ELAN-) ELAN PHARM INC.
 PA
 XX Justice A, Singh T, Valentino KL, Miljanich GP, Gohil KC;
 PI WPI; 2000-038270/03.
 DR
 XX Measuring the activity of test compounds in blocking voltage-gated
 PT calcium channels, binding to the omega conopeptide binding site and
 PT inhibiting norepinephrine (noradrenaline) release for treating
 PT inflammation.
 PT
 XX Disclosure; Fig 1; 47pp; English.
 PS
 XX A method has been developed of selecting a test compound for treating
 CC inflammation. The method comprises measuring the activity of the test
 CC compound in blocking voltage-gated calcium channels, binding to the omega
 CC conopeptide binding site and inhibiting norepinephrine (noradrenaline)
 CC release from nervous tissue. The method is useful for selecting compounds
 CC for treating inflammation. The selected compounds are capable of
 CC producing analgesia in a mammalian subject with chronic or intractable
 CC pain. Analgesia caused by selected compounds may reduce the reliance on
 CC opioid analgesic agents of the prior art which cause dependency and
 CC tolerance, requiring potentially dangerous increases in opioid doses to
 CC achieve the analgesic effect. The present sequence represents an omega
 CC conopeptide given in the present invention
 CC
 XX Sequence 27 AA;
 SQ

Query Match 80.0%; Score 120; DB 3; Length 27;
 Best Local Similarity 84.6%; Pred. No. 3.2e-07;
 Matches 22; Conservative 3; Mismatches 1; Indels 0; Gaps 0;

QY 1 CKXGSSCSXTSYNCCRCNXYTKRC 26
 DB 1 CLXGSSCSXTSYNCCRCNXYSRKC 26

RESULT 27
 AAR39614
 ID AAR39614 standard; peptide; 27 AA.
 XX
 AC AAR39614;
 XX
 DT 25-MAR-2003 (revised)
 DT 20-DEC-1993 (first entry)
 XX
 XX TVIA/SNX185.
 DE
 XX Omega conopeptide; OCT; analgesia; inhibition; voltage-gated;
 KW calcium channel; neurone; contraction; guinea pig; ileum; MVIIA;
 KW binding site; toxin; marine; snail; Conus; opioid; chronic pain;
 KW narcotics.
 XX
 OS Synthetic.
 XX
 XX Key Location/Qualifiers
 FH Disulfide-bond 1..16
 FT Modified-site 4 /note= "4Hyp"
 FT Disulfide-bond 8..19 /note= "4Hyp"
 FT Modified-site 10 /note= "4Hyp"
 FT Disulfide-bond 15..26 /note= "4Hyp"
 FT Modified-site 21 /note= "4Hyp"
 FT
 XX WO9313128-A1.
 PN

XX 08-JUL-1993.
 PD XX
 PF 30-DEC-1992; 92WO-US011349.
 XX PF
 PR 30-DEC-1991; 91US-00814759.
 XX PR
 PA (NEUR-) NEUREX CORP.
 XX PA
 PI Justice A, Singh T, Gohil K, Valentino KL, Miljanich GP;
 XX PI
 DR WPI; 1993-227270/28.
 XX DR
 XX Use of omega-cono-peptide(s) which selectively inhibit voltage-gated
 PT calcium channels - to induce analgesia, enhance opiate analgesics, treat
 PT pain etc.
 XX PT
 PS Claim 1; Fig 1; 90pp; English.
 XX PS
 CC The sequences given in AAR39608-30 are omega conopeptides (OCTs) and
 CC derivatives of these, which may be used to produce analgesia in a mammal.
 CC These OCTs inhibit voltage-gated calcium channels selectively in neuronal
 CC tissue. This is shown by the peptides ability to stimulate contraction in
 CC guinea pig ileum and to bind to OCT MWIIA binding sites present in
 CC neuronal tissue. OCTs are components of peptide toxins derived from
 CC marine snails of the genus Conus, and act as calcium channel blockers.
 CC These OCTs may be used to replace opioids in the treatment of chronic pain
 CC or to reduce the opioid dosage required. This helps to reduce dependence
 CC on and tolerance to opioid narcotics. (Updated on 25-MAR-2003 to correct
 CC PN field.)
 XX CC
 SQ Sequence 27 AA;
 Query Match 78.0%; Score 117; DB 2; Length 27;
 Best Local Similarity 73.1%; Pred. No. 7.2e-07;
 Matches 19; Conservative 3; Mismatches 4; Indels 0; Gaps 0;
 QY 1 CKSXGSSCSXTSYNCCRSNCNXYTKRC 26
 DB 1 CLSPGSSCSPTSYNCCRSNCNPSYRK 26
 RESULT 28
 AAR37759
 ID AAR37759 standard; peptide; 27 AA.
 XX
 AC AAR37759;
 XX
 DT 25-MAR-2003 (revised)
 DT 08-SEP-1993 (first entry)
 XX
 DE TVIA/SNX-185.
 XX
 KW Ischaemia; neuronal; omega-conotoxin; OCT; MWIIA; MWIIC; MWIID; MWIIB;
 KW GVIA; GVIIA; SVIA; SVIIA; TVIA; TVIIB; SNX-207; stroke; delayed treatment;
 KW antihistamine; blood pressure; N-type voltage-gated Ca currents;
 KW N-channel mediated neurotransmitter release.
 XX
 OS Synthetic.
 XX
 XX Key Location/Qualifiers
 FH Disulfide-bond 1..16
 FT Modified-site 4 /note= "hydroxyproline"
 FT Disulfide-bond 8..19
 FT Modified-site 10 /note= "hydroxyproline"
 FT Disulfide-bond 15..26
 FT Modified-site 21 /note= "hydroxyproline"
 XX
 XX W09310145-A1.
 PN
 XX

PD 27-MAY-1993.
 XX
 PF 12-NOV-1992; 92WO-US009766.
 XX PF
 PR 12-NOV-1991; 91US-00789913.
 PR 17-JUL-1992; 92US-00916478.
 XX PR
 PA (NEUR-) NEUREX CORP.
 XX PA
 PI Miljanich GP, Bowersox SS, Fox JA, Valentino KL, Bitner RS;
 PI Yamashiro DH;
 XX PI
 DR WPI; 1993-182487/22.
 XX DR
 XX Redn. of neuronal damage caused by ischaemia - by admin. of cpds. that
 PT bind specifically to omega-conotoxin MWIIA binding sites.
 PT
 XX Disclosure; Fig 1; 103pp; English.
 XX
 CC Ischaemia-related neuronal damage in mammals is reduced by admin., 4-24
 CC hr after onset of ischaemia, of a cpd. (I) which binds selectively to an
 CC omega-conotoxin (OCT) MWIIA site in neuronal tissue. (I) has selectivity
 CC at least 100 expressed as ratio of binding affinity for the MWIIA site to
 CC that for the MWIIC site. (I) is one of the OCTs MWIIA, MWIIB, GVIA, GVIIA
 CC or RVIA or it is the cpd. SNX-207. (I) is esp. used to reduce neuronal
 CC damage caused by stroke. By delaying admin. for some time (compare
 CC US051403 where cpds. are given within 1 hr of the onset of ischaemia) a
 CC greater redn. in neuronal damage is achieved. (I) is admin. e.g. by
 CC intracerebroventricular (ICV) injection at 0.1-20 microg/kg, but can also
 CC be given i.v. (opt. after treatment with antihistamines to minimise redn.
 CC in blood pressure caused by (I)). (I) is also at least as effective as
 CC the specified conotoxins for (1) selective inhibition of N-type voltage-
 CC gated Ca currents in neuronal tissue and (2) selective inhibition of N-
 CC channel mediated neurotransmitter release in neuronal tissue. Primary
 CC sequences of omega-conopeptides are given in AAR37752-62. Several analog
 CC omega-conopeptides are given in AAR37763-76. (Updated on 25-MAR-2003 to
 CC correct PN field.)
 XX CC
 SQ Sequence 27 AA;
 Query Match 78.0%; Score 117; DB 2; Length 27;
 Best Local Similarity 73.1%; Pred. No. 7.2e-07;
 Matches 19; Conservative 3; Mismatches 4; Indels 0; Gaps 0;
 QY 1 CKSXGSSCSXTSYNCCRSNCNXYTKRC 26
 DB 1 CLSPGSSCSPTSYNCCRSNCNPSYRK 26
 RESULT 29
 AAR76095
 ID AAR76095 standard; peptide; 27 AA.
 XX
 AC AAR76095;
 XX
 DT 27-AUG-2003 (revised)
 DT 25-MAR-2003 (revised)
 DT 02-FEB-1996 (first entry)
 XX
 DE Omega conotoxin TVIA peptide.
 XX
 KW Omega conotoxin; marine snail; Conus; voltage-gated Ca channel blocker;
 KW synaptosome; membrane; fish electric organ; mammalian brain; ischaemia;
 KW binding protein; binding affinity; stroke.
 XX
 OS Conus.
 XX
 XX Key Location/Qualifiers
 FH Disulfide-bond 1..16
 FT Modified-site 4 /label= 4-Hyp
 FT Disulfide-bond 8..19
 FT Modified-site 10

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FT FT /label= 4-Hyp
FT Disulfide-bond 15..26
FT Modified-site 21
FT FT /label= 4-Hyp
FT Modified-site 27
FT FT /note= "amidated C-terminus"
XX XX
XX US5424218-A.
XX PN
XX 13-JUN-1995.
XX PD
XX 04-NOV-1993; 93US-00147714.
XX PF
XX 02-NOV-1989; 89US-00440094.
XX PR
XX 22-AUG-1990; 90US-00561765.
XX PR
XX 23-MAR-1992; 92US-00855269.
XX XX
XX (NEUR-) NEUREX CORP.
XX PA
XX Valentino KL, Bowersox SS, Bitner RS, Miljanich GP, Yamashiro DH;
XX PI Fox JA;
XX PI
XX WPI; 1995-223694/29.
XX DR
XX Identifying cpds. able to reduce neuronal damage caused by ischaemia - by
XX PT measuring their affinity to omega conotoxin MVIIA binding site and
XX PT ability e.g. to inhibit voltage gated calcium channels.
XX PT
XX PS Disclosure; Fig 1; 31pp; English.
XX CC
XX The peptides AAR76089-95 are naturally occurring omega conotoxin (OCT)
XX CC peptides derived from marine snails of the Conus genus. The peptide
XX CC sequences were used to chemically synthesise the OCT peptide fragments
XX CC AAR76096-R76109. The OCT peptides act as voltage-gated Ca channel
XX CC blockers by binding to a 210 kD protein from synaptosomal membrane
XX CC preparations from fish electric organ or mammalian brains. The peptides
XX CC and their synthesised fragments can be used to screen for compounds that
XX CC bind to the OCT binding protein, by displacing a high affinity labelled
XX CC OCT, such as MVIIA, from a synaptosomal membrane preparation. The
XX CC compounds should have binding affinities and activities at least equal to
XX CC those of the natural peptides (Ki 0.44-324 nM). The screened compounds
XX CC are potentially useful in treating ischaemic conditions, esp. stroke, and
XX CC can reduce sec. anatomical and functional damage associated with those
XX CC conditions. (Updated on 25-MAR-2003 to correct PF field.) (Updated on 27-
XX CC AUG-2003 to correct OS field.)
XX CC
XX SQ Sequence 27 AA;

Query Match 78.0%; Score 117; DB 2; Length 27;
Best Local Similarity 73.1%; Pred. No. 7.2e-07;
Matches 19; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKSXGSCSXTSYNCCRSNCNYTKRC 26
| | | | | | | | | | | | | | | | | | | | |
Db 1 CLSPGSSCSPTSYNCCRSNCNPYSRKC 26
| | | | | | | | | | | | | | | | | | | | |

RESULT 30
AAW19550
ID AAW19550 standard; peptide; 27 AA.
XX
XX AAW19550;
XX
XX 27-AUG-2003 (revised)
DT 13-OCT-1997 (first entry)
XX
XX Natural omega-conopeptide TVIA/SNX-185 used for pain relief.
XX DE
XX Conopeptide; cone snail; pain; analgesic; neuropathy; epidural;
XX KW N-type voltage-sensitive calcium channel; block; Conus.
XX OS
XX Conus.
XX KW

Query Match 78.0%; Score 117; DB 2; Length 27;
Best Local Similarity 73.1%; Pred. No. 7.2e-07;
Matches 19; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKSXGSCSXTSYNCCRSNCNYTKRC 26
| | | | | | | | | | | | | | | | | | | | |
Db 1 CLSPGSSCSPTSYNCCRSNCNPYSRKC 26
| | | | | | | | | | | | | | | | | | | | |

RESULT 31
AAW72611
ID AAW72611 standard; peptide; 27 AA.
XX
XX AAW72611;
XX
XX 27-AUG-2003 (revised)
DT 06-JAN-1999 (first entry)
XX
XX Conus genus natural omega-conopeptide TVIA/SNX-185.
XX DE
XX Conus genus; marine snail; cone snail; omega-conopeptide; analgesia;
XX KW nociceptive pain; neuropathic pain; neuronal tissue; conotoxin;
XX KW inflammation; schizophrenia; tardive dyskinesia; acute dystonic reaction;
XX KW

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XX OS Conus sp.
XX FH Key Location/Qualifiers
XX FT Disulfide-bond 1. .16
XX FT Modified-site 4
XX FT Disulfide-bond 8. .19 /label= 4Hyp
XX FT Modified-site 10
XX FT Disulfide-bond 15. .26 /label= 4Hyp
XX FT Modified-site 21
XX FT Misc-difference 25 /label= 4Hyp
XX FT /note= "Optionally contains C-terminal amide"
XX PN US965534-A.
XX XX 12-OCT-1999.
XX PD 13-MAR-1998; 98US-00039168.
XX PF 22-NOV-1995; 95US-00562142.
XX PR (ALCO-) ALCON LAB INC.
XX PA Hellberg M, Pang I, Kapin M;
XX PI WPI; 1999-579926/49.
XX DR Treatment or prevention of retinal or optic nerve head damage comprises
XX PT administration of an omega-conotoxin derivative.
XX PS Claim 2; Col 11-12; 7pp; English.
XX XX
XX CC This sequence represents omega-conotoxin OCT TVIA. Omega-conotoxins
XX CC selectively block N-type calcium channels responsible for calcium influx
XX CC in neurons. Acute retinal or optic nerve damage, which can result in the
XX CC loss of vision, is caused by acute trauma and pathological events such as
XX CC ischaemia, hypoxia or oedema. The release of excitatory amino acids is
XX CC implicated in ischaemia-related neuronal and retinal damage, with
XX CC excitatory amino acid release leading to excessive stimulation of post-
XX CC synaptic excitatory amino acid receptors, which can result in cell
XX CC injury. The release of such excitatory amino acids from presynaptic nerve
XX CC terminals is dependent upon an elevation of calcium in the nerve
XX CC calcium channels that are inhibited by omega-conotoxins. Intraocular
XX CC administration of at least one omega-conotoxin could be used for the
XX CC treatment or prevention of retinal or optic nerve head damage resulting
XX CC from acute traumatic or acute ischaemic events
XX SQ Sequence 27 AA;

Query Match 78.0%; Score 117; DB 2; Length 27;
Best Local Similarity 73.1%; Pred. NO. 7.2e-07;
Matches 19; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKSXGSSCSXTSYNCCRSNCNYTKRC 26
| | | | | | | | | | | | | | | | | | | | |
Db 1 CLSPGSSCSPTSYNCCRSNCNPYSRKC 26
| | | | | | | | | | | | | | | | | | | | |

RESULT 34
AAB14358
ID AAB14358 standard; peptide; 27 AA.
XX AC AAB14358;
XX XX 06-DEC-2000 (first entry)
XX DE Omega-conopeptide TVIA/SNX-185.
XX KW Marine snail; omega-conopeptide; calcium channel blocker; TVIA; SNX-185;

toxin; analgesic; antiinflammatory; anticonvulsant; neuroleptic;
norepinephrine release inhibitor; schizophrenia; tardive dyskinesia;
acute dystonic reaction; inflammation; epilepsy.
Conus sp.
Key Location/Qualifiers
Disulfide-bond 1. .16
Modified-site 4 /label= 4Hyp
Disulfide-bond 8. .19
Modified-site 10 /label= 4Hyp
Disulfide-bond 15. .26
Modified-site 21 /label= 4Hyp
Modified-site 27 /note= "C-terminal amide"
US6087091-A.
11-JUL-2000.
23-APR-1999; 99US-00298017.
30-DEC-1991; 91US-00814759.
15-APR-1993; 93US-00049794.
03-JUL-1996; 96US-00675354.
01-NOV-1996; 96US-00742774.
21-AUG-1998; 98US-00138439.
(ELAN-) ELAN PHARM INC.
Singh T, Gohil KC, Valentino KL, Miljanich GP, Justice A;
WPI; 2000-490177/43.
Selecting a compound for producing analgesia involves measuring activity
of test compound in blocking voltage-gated calcium channels, binding to
omega conopeptide binding site and inhibiting norepinephrine release.
Disclosure; Fig 1; 58pp; English.
The present sequence is an omega-conopeptide from marine snails of the
genus Conus. Omega-conopeptides are components of peptide toxins produced
by the cone snails, and which act as calcium channel blockers. Natural
omega-conopeptides and their derivatives may be useful for producing
analgesia in nociceptive and neuropathic pain. The peptides bind to omega
-conopeptide binding sites, which are present mainly in neuronal tissue,
and inhibit norepinephrine release from nervous tissue. Conopeptides such
as MVIIA and TVIA are effective as therapeutic agents for treating
neurogenic conditions such as schizophrenia, tardive dyskinesia and acute
dystonic reactions, inflammation and epilepsy
Sequence 27 AA;

Query Match 78.0%; Score 117; DB 3; Length 27;
Best Local Similarity 73.1%; Pred. NO. 7.2e-07;
Matches 19; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKSXGSSCSXTSYNCCRSNCNYTKRC 26
| | | | | | | | | | | | | | | | | | | | |
Db 1 CLSPGSSCSPTSYNCCRSNCNPYSRKC 26
| | | | | | | | | | | | | | | | | | | | |

RESULT 35
AAB19448
ID AAB19448 standard; peptide; 27 AA.
XX AC AAB19448;
XX XX 06-MAR-2001 (first entry)
XX DT
XX XX

```


CC bonds with amino/hydroxyl/thiol groups on blood components to form a
 CC peptidase stabilised therapeutic peptide composed of 3-50 amino acids.
 CC (1) are useful for modifying therapeutic peptides e.g. hormones, growth
 CC factors and neurotransmitters, to protect them from peptidase activity in
 CC vivo for the treatment of various disorders. Endogenous therapeutic
 CC peptides are not suitable as drug candidates as they require frequent
 CC administration due to rapid degradation by peptidases in the body.
 CC Modifying and attaching therapeutic peptides to albumin prevents or
 CC reduces the action of peptidases to increase length of activity (half
 CC life) and specificity as bonding to large molecules decreases
 CC intracellular uptake and interference with physiological processes.
 CC AAB90829 to AAB92441 represent peptides which can be used in the
 CC exemplification of the present invention
 CC
 XX Sequence 24 AA;
 SQ

Query Match 77.0%; Score 115.5; DB 4; Length 24;
 Best Local Similarity 88.9%; Pred. No. 9.8e-07;
 Matches 24; Conservative 0; Mismatches 0; Indels 3; Gaps 3;

QY 1 CKSXGSSCSXTSYNCCRSNCNXYTKRCY 27
 ||| ||||| ||||| ||||| ||||| |||||
 Db 1 CKS-GSSCS-TSYNCCRSNCN-XYTKRCY 24

RESULT 39
 AAR38517
 ID AAR38517 standard; peptide; 27 AA.
 XX
 AC AAR38517;
 XX
 DT 12-NOV-1993 (first entry)
 XX
 DE Omega-conotoxin neurotoxin peptide (2).
 XX
 KW Omega-conotoxin; neurotoxin; peptide; Conus; lung disease; bronchitis;
 KW N-channel; calcium; allergy; airway hyperreactivity; farmers lung;
 KW extrinsic asthma; industrial asthma; antagonist; pigeon fanciers lung;
 KW chronic obstructive pulmonary disease; venom; viral infection.
 XX
 OS Conus sp.
 XX
 PH Key Location/Qualifiers
 FT Misc-difference 2 /label= LYS, LEU
 FT Misc-difference 4 /note= "Unspecified amino acid"
 FT Misc-difference 10 /note= "Unspecified amino acid"
 FT Misc-difference 21 /note= "Unspecified amino acid"
 FT Misc-difference 23 /label= SER, THR
 FT Misc-difference 24 /label= LYS, ARG
 FT Misc-difference 25 /label= LYS, ARG
 FT Misc-difference 27 /label= TVR, ARG
 FT /note= "May opt. be amidated"
 XX
 PN GB2262886-A.
 XX
 PD 07-JUL-1993.
 XX
 PF 17-DEC-1991; 91GB-00026739.
 XX
 PR 17-DEC-1991; 91GB-00026739.
 XX
 PA (ELIL) LILLY IND LTD.
 XX
 PI Bond A, Boot JR;
 XX

DR WPI; 1993-215931/27.
 XX N-channel calcium antagonists, e.g. conotoxin peptide(s) - used for
 PT treating diseases which cause bronchoconstriction.
 XX
 PS Disclosure; Page 2; 9pp; English.
 XX
 CC The sequences given in R3856-17 are omega-conotoxin neurotoxin peptides
 CC which have been isolated from Conus venom. These peptides act as N-
 CC channel calcium antagonists and may be used for treating allergic lung
 CC diseases such as extrinsic asthma and industrial asthma eg. farmers lung
 CC and pigeon fanciers lung. They may also be used to treat other
 CC inflammatory disorders such as chronic obstructive pulmonary disease and
 CC bronchitis, or airway hyperreactivity caused by viral infection
 XX
 SQ Sequence 27 AA;
 Query Match 76.0%; Score 114; DB 2; Length 27;
 Best Local Similarity 84.6%; Pred. No. 1.6e-06;
 Matches 22; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKSXGSSCSXTSYNCCRSNCNXYTKRC 26
 | ||||| ||||| ||||| |||||
 Db 1 CKSXGSSCSXTSYNCCRSNCNXYXXC 26

RESULT 40
 ABB96856
 ID ABB96856 standard; peptide; 30 AA.
 XX
 AC ABB96856;
 XX
 DT 07-AUG-2003 (revised)
 DT 12-JUL-2002 (first entry)
 XX
 DE Omega-conopeptide L6.1 toxin sequence.
 XX
 KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
 KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
 KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
 KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
 KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
 KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
 KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
 KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
 KW psychosis; anxiety; schizophrenia.
 XX
 OS Conus sp.
 XX
 PN WO200207675-A2.
 XX
 PD 31-JAN-2002.
 XX
 PF 23-JUL-2001; 2001WO-US023041.
 XX
 PR 21-JUL-2000; 2000US-0219616P.
 PR 05-FEB-2001; 2001US-0265888P.
 XX
 PA (UTAH) UNIV UTAH RES FOUND.
 XX
 PA (COGN-) COGNETIX INC.
 XX
 PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
 PI Jacobsen R, Jones RM, Cartier GE;
 XX
 DR WPI; 2002-257318/30.
 XX
 CC New omega-conopeptides useful for treating disorders associated with
 PT voltage gated ion channels e.g. pain, inflammation, neurologic or
 PT cardiovascular disorders.
 XX
 PS Claim 1(a); Page 72; 195pp; English.
 XX
 CC The invention relates to isolated omega-conopeptides, nucleic acid

CC sequences encoding them, and propeptide sequences. The activity of the
 CC peptides of the invention may be described as, analgesic, anticonvulsant,
 CC vasotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular,
 CC antiinflammatory, antimigraine, antidiabetic, tranquiliser, vulnerary,
 CC antipsychotic, anxiolytic and neuroleptic. Peptides of the invention act
 CC by modulating the activity of voltage gated ion channels. They may be
 CC used for treating or preventing disorders associated with voltage gated
 CC ion channels such as neurological disorders, e.g. seizure (associated
 CC with epilepsy), neurotoxic injury associated with conditions of hypoxia,
 CC anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal
 CC chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic
 CC events; pain e.g. migraine; inflammation or cardiovascular disorders.
 CC They may also be used for treating psychiatric disorders e.g. psychosis,
 CC anxiety or schizophrenia. The analgesic agents of the invention show
 CC diminished side effects and toxicity, and are non-addictive. The
 CC sequences given in records ABB96807-ABB96905 represent omega-conopeptide
 CC toxin sequences. (Updated on 07-AUG-2003 to correct OS field.)
 XX
 SQ Sequence 30 AA;

Query Match 74.7%; Score 112; DB 5; Length 30;
 Best Local Similarity 69.2%; Pred. No. 3e-06;
 Matches 18; Conservative 2; Mismatches 6; Indels 0; Gaps 0;

QY 1 CKXSGSCSXSYNCRSCNXYTKRC 26
 ||||| ||||| ||||| : |||||
 Db 1 CKSPGSPCVTSYNCCTFCSSYTKRC 26

RESULT 41

ABB96653
 ID ABB96653 standard; peptide; 75 AA.

AC ABB96653;

DT 12-JUL-2002 (first entry)

DE Omega-conopeptide L6.1 propeptide.

XX Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
 KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
 KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
 KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
 KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
 KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
 KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
 KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
 KW psychosis; anxiety; schizophrenia.

OS Conus leopardus.

PN WO200207675-A2.

XX 31-JAN-2002.

PF 23-JUL-2001; 2001WO-US023041.

XX 21-JUL-2000; 2000US-0219616P.

PR 05-FEB-2001; 2001US-0265888P.

XX (UTAH) UNIV UTAH RES FOUND.

PA (COGN-) COGNETIX INC.

XX Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;

PI Jacobsen R, Jones RM, Cartier GE;

DR WPI; 2002-257318/30.

DR N-PSDB; ABL98912.

XX New omega-conopeptides useful for treating disorders associated with
 PT voltage gated ion channels e.g. pain, inflammation, neurologic or
 PT cardiovascular disorders.
 XX

PS Claim 1(c); Page 50; 195pp; English.
 XX The invention relates to isolated omega-conopeptides, nucleic acid
 CC sequences encoding them, and propeptide sequences. The activity of the
 CC peptides of the invention may be described as, analgesic, anticonvulsant,
 CC vasotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular,
 CC antiinflammatory, antimigraine, antidiabetic, tranquiliser, vulnerary,
 CC antipsychotic, anxiolytic and neuroleptic. Peptides of the invention act
 CC by modulating the activity of voltage gated ion channels. They may be
 CC used for treating or preventing disorders associated with voltage gated
 CC ion channels such as neurological disorders, e.g. seizure (associated
 CC with epilepsy), neurotoxic injury associated with conditions of hypoxia,
 CC anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal
 CC chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic
 CC events; pain e.g. migraine; inflammation or cardiovascular disorders.
 CC They may also be used for treating psychiatric disorders e.g. psychosis,
 CC anxiety or schizophrenia. The analgesic agents of the invention show
 CC diminished side effects and toxicity, and are non-addictive. The
 CC sequences given in records ABB96595-ABB96697 represent omega-conopeptide
 CC propeptide sequences
 XX
 SQ Sequence 75 AA;

Query Match 74.7%; Score 112; DB 5; Length 75;
 Best Local Similarity 69.2%; Pred. No. 6.6e-06;
 Matches 18; Conservative 2; Mismatches 6; Indels 0; Gaps 0;

QY 1 CKXSGSCSXSYNCRSCNXYTKRC 26
 ||||| ||||| ||||| : |||||
 Db 46 CKSPGSPCVTSYNCCTFCSSYTKRC 71

RESULT 42

ARR12543
 ID AAR12543 standard; protein; 27 AA.

XX AAR12543;

DT 23-SEP-2004 (revised)

DT 05-SEP-1991 (first entry)

XX Omega conotoxin peptide #2.

XX neuronal calcium-channel antagonist; OCT; adrenaline release.

XX Synthetic.

FT Key Location/Qualifiers

FT Disulfide-bond 1..16

FT Misc-difference 2

FT /label= Lys, Leu

FT /note= "see comments for provisos"

FT Misc-difference 4

FT /label= 4Hyp

FT Disulfide-bond 8..19

FT Misc-difference 10

FT /label= 4Hyp

FT Disulfide-bond 15..26

FT Misc-difference 21

FT /label= 4Hyp

FT Misc-difference 23

FT /label= Thr, Ser

FT /note= "see comments for provisos"

FT Misc-difference 24

FT /label= Lys, Arg

FT /note= "see comments for provisos"

FT Misc-difference 25

FT /label= Arg, Lys

FT /note= "see comments for provisos"

FT Misc-difference 27

FT /label= Tyr, Arg

FT /note= "see comments for provisos"

XX

PN WO9107980-A.
 PD 13-JUN-1991.
 XX
 PF 22-NOV-1989; 89US-00440094.
 XX
 PR 22-NOV-1989; 89US-00440094.
 XX
 PA (NEUR-) NEUREX CORP.
 XX
 PI Miljanjich GP, Bitner RS, Bowersox SS, Fox JA, Valentino KL;
 PI Yamashiro DH;
 XX
 DR WPI; 1991-192969/26.
 XX
 CC Compen. for reducing ischaemia-related neuronal damage - contains
 PT neuronal channel antagonist omega conotoxin peptide which blocks
 PT norepinephrine release in central nervous system neuronal cells.
 XX
 PS Claim 13; Page 59; 74pp; English.
 XX
 CC This generic OCT peptide excludes the peptides having the following
 CC combinations of amino acids at the variable positions: K(2), T(23),
 CC K(24), R(25) and Y(27); and L(2), S(23), R(24), K(25) and R(27). Specific
 CC peptides which are covered by this generic formula can bind to neuronal
 CC membrane OCT MWIIA binding sites with a binding activity in the range of
 CC such activity for MWIIA, GVIA and TVIA. They are used in a pharmaceutical
 CC composition with a sterile injectable medium to reduce neuronal damage
 CC related to an ischaemic condition in a mammal. The disulphide bonds,
 CC although not directly indicated on the published formula, are described
 CC in the disclosure. See also AAR12542, AAR12544-7 and AAR13264-6
 CC
 CC Revised record issued on 23-SEP-2004 : Correction to Feature Table Key
 XX
 XX Sequence 27 AA;
 SQ
 Query Match 74.0%; Score 111; DB 2; Length 27;
 Best Local Similarity 73.1%; Pred. No. 3.6e-06;
 Matches 19; Conservative 0; Mismatches 7; Indels 0; Gaps 0;
 QY 1 CKSXGSSCSXTSYNCCRSNCNXYTKRC 26
 DB 1 CXSPGSSCSPTSYNCCRSNCNYPYXXC 26
 RESULT 43
 AAW12986
 ID AAW12986 standard; peptide; 27 AA.
 XX
 AC AAW12986;
 XX
 DT 25-MAR-2003 (revised)
 DT 22-APR-1997 (first entry)
 XX
 DE Omega conopeptide SNX-207.
 XX
 KW Omega conopeptide; analgesic; treatment; neuropathic pain; inhibition;
 KW neuronal damage; schizophrenia; tardive dyskinesia; analgesia;
 KW acute dystonic reactions; inflammation; epilepsy.
 XX
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Modified-site 4 /label= Hyp
 FT Modified-site 21 /label= Hyp
 FT
 XX US5587454-A.
 PN
 XX 24-DEC-1996.
 PD
 XX 15-APR-1993; 93US-00049794.
 PF
 30-DEC-1991; 91US-00814759.
 PR 30-DEC-1992; 92WO-US011349.
 XX
 PA (NEUR-) NEUREX CORP.
 XX
 PI Gohil KC, Miljanich GP, Valentino KL, Justice A, Singh T;
 XX
 DR WPI; 1997-064830/06.
 XX
 CC Omega conopeptide(s) - useful as analgesics, esp. for treating
 PT neuropathic pain.
 XX
 PS Disclosure; Col 53-54; 58pp; English.
 XX
 CC The present peptide is an omega conopeptide, useful as an analgesic,
 CC especially for treating neuropathic pain. The peptide, which can be
 CC prepared by solid phase synthesis, can also be used to inhibit neuronal
 CC damage and treat schizophrenia, tardive dyskinesia, acute dystonic
 CC reactions, inflammation and epilepsy. (Updated on 25-MAR-2003 to correct
 CC PF field.)
 XX
 SQ Sequence 27 AA;
 Query Match 72.7%; Score 109; DB 2; Length 27;
 Best Local Similarity 73.1%; Pred. No. 6.2e-06;
 Matches 19; Conservative 3; Mismatches 4; Indels 0; Gaps 0;
 QY 1 CKSXGSSCSXTSYNCCRSNCNXYTKRC 26
 DB 1 CLSXGSSCSRLMYNCCRSNCNYSRKC 26
 RESULT 44
 AAY56497
 ID AAY56497 standard; peptide; 27 AA.
 XX
 AC AAY56497;
 XX
 DT 16-FEB-2000 (first entry)
 XX
 DE Analogue omega conopeptide SNX-207.
 XX
 KW Omega conopeptide; analgesic; nociceptive; neuropathic; pain; conotoxin;
 KW marine snail; peptide toxin; inflammation; binding;
 KW voltage-gated calcium channel; inhibition; norepinephrine; noradrenaline;
 KW anti-inflammatory.
 XX
 OS Conus sp.
 XX
 FH Key Location/Qualifiers
 FT Disulfide-bond 1..16
 FT Misc-difference 4 /note= "unspecified"
 FT Disulfide-bond 8..19
 FT Misc-difference 10 /note= "unspecified"
 FT Disulfide-bond 15..26
 FT Misc-difference 21 /note= "unspecified"
 FT Modified-site 27 /note= "amidated"
 FT
 XX US5994305-A.
 PN
 XX 30-NOV-1999.
 PD
 XX 21-AUG-1998; 98US-00138439.
 PF
 XX 30-DEC-1991; 91US-00814759.
 XX 15-APR-1993; 93US-00049794.
 PR 03-JUL-1996; 96US-00675354.
 PR 01-NOV-1996; 96US-00742774.
 PR

CC	effective to:	(i) block voltage-gated calcium channels; (ii) bind with
CC	high affinity to an omega-conopeptide binding site; and (iii) inhibit	
CC	neurotransmitter release from nervous tissue. The method is used to treat	
CC	inflammation and associated pain. The treatment can also be used to	
CC	produce analgesia (especially in subjects experiencing neuropathic pain);	
CC	and to treat schizophrenia, tardive dyskinesia and acute dystonic	
CC	reactions, rheumatoid arthritis, and epilepsy. The present sequence	
CC	represents an analogue omega-conopeptide. Omega-conopeptides are	
CC	components of peptide toxins produced by marine snails of the genus	
CC	Conus, and which act as calcium channel blockers. (Updated on 27-AUG-2003	
CC	to correct OS field.)	
XX		
SQ	Sequence 27 AA;	
Query Match	72.0%; Score 108; DB 2; Length 27;	
Best Local Similarity	69.2%; Pred. No. 8.2e-06;	
Matches	18; Conservative 3; Mismatches 5; Indels 0; Gaps 0;	
QY	1 CUSXGSSCSXTSYNCCRSCNXYTKRC 26	
Dd		
	1 CUSXGSSCSRLMYNCCRSCNPYSRKC 26	
RESULT 48		
AAY56498		
ID	AAY56498 standard; peptide; 27 AA.	
XX		
AC	AAY56498;	
XX		
DT	16-FEB-2000 (first entry)	
XX		
DE	Analogue omega conopeptide SNX-236.	
XX		
KW	Omega conopeptide; analgesic; nociceptive; neuropathic; pain; conotoxin;	
KW	marine snail; peptide toxin; inflammation; binding;	
KW	voltage-gated calcium channel; inhibition; norepinephrine; noradrenaline;	
KW	anti-inflammatory.	
XX		
OS	Conus sp.	
XX		
Key	Location/Qualifiers	
FT	Disulfide-bond 1..16	
FT	Misc-difference 4	/note= "unspecified"
FT	Disulfide-bond 8..19	/note= "unspecified"
FT	Misc-difference 10	/note= "unspecified"
FT	Disulfide-bond 15..26	/note= "unspecified"
FT	Misc-difference 21	/note= "unspecified"
FT	Modified-site 27	/note= "amidated"
XX		
FN	US5994305-A.	
XX		
PD	30-NOV-1999.	
XX		
PF	21-AUG-1998; 98US-00138439.	
XX		
PR	30-DEC-1991; 91US-00814759.	
PR	15-APR-1993; 93US-00049794.	
PR	03-JUL-1996; 96US-00675354.	
PR	01-NOV-1996; 96US-00742774.	
XX		
PA	(ELAN-) ELAN PHARM INC.	
XX		
PI	Justice A, Singh T, Valentino KL, Miljanich GP, Gohil KC;	
XX		
DR	WPI; 2000-038270/03.	
XX		
PT	Measuring the activity of test compounds in blocking voltage-gated	
PT	calcium channels, binding to the omega conopeptide binding site and	
PT	inhibiting norepinephrine (noradrenaline) release for treating	

PT Enhancing an

Enhancing analgesia

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OM protein - protein search, using sw model

Run on: March 28, 2005, 16:30:33 ; Search time 66.6667 Seconds

(without alignments)
145.035 Million cell updates/sec

Title: US-09-787-082A-11

Perfect score: 147

Sequence: 1 CKGKAGXCSRLMYDCTGCSRGKC 25

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2105692 seqs, 386760381 residues

Total number of hits satisfying chosen parameters: 2105692

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 50 summaries

Database : A_Geneseq_16Dec04:*

1: Geneseqp1980s:*

2: Geneseqp1990s:*

3: Geneseqp2000s:*

4: Geneseqp2001s:*

5: Geneseqp2002s:*

6: Geneseqp2003as:*

7: Geneseqp2003bs:*

8: Geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	146	99.3	25	2 AAR39626	Aar39626 SNX-200.
2	146	99.3	25	2 AAR37771	Aar37771 SNX-200.
3	146	99.3	25	2 AAW19564	Aaw19564 SNX-200.
4	146	99.3	25	3 AAY56492	Aay56492 Analogue
5	145	98.6	25	2 AAR39608	Aar39608 WIIIA/SNX
6	145	98.6	25	2 AAR37752	Aar37752 WIIIA/SNX
7	145	98.6	25	2 AAR32777	Aar32777 WIIIA ome
8	145	98.6	25	2 AAR76089	Aar76089 Omega con
9	145	98.6	25	2 AAW19544	Aaw19544 Natural o
10	145	98.6	25	2 AAW19569	Aaw19569 SNX-279,
11	145	98.6	25	2 AAW12967	Aaw12967 Omega con
12	145	98.6	25	2 AAW72605	Aaw72605 Conus gen.
13	145	98.6	25	2 AAW95564	Aaw95564 Omega-con
14	145	98.6	25	2 AAY42335	Aay42335 Omega-con
15	145	98.6	25	3 AAY56473	Aay56473 Natural o
16	145	98.6	25	3 AAY43714	Aay43714 Amino aci
17	145	98.6	25	3 AAB14352	Aab14352 Omega-con
18	145	98.6	25	4 AAB92219	Aab92219 Toxin pep
19	145	98.6	25	4 AAB19442	Aab19442 Primary s
20	145	98.6	25	4 AAB97046	Aab97046 Omega-con
21	145	98.6	25	5 AAO15124	Aao15124 Cone snail
22	145	98.6	26	2 AAR12546	Aar12546 Omega con
23	145	98.6	26	2 AAR37765	Aar37765 SNX-193.
24	145	98.6	26	2 AAW19557	Aaw19557 SNX-193,
25	145	98.6	26	3 AAY56485	Aay56485 Analogue

26	145	98.6	27	2 AAR13266	Aar13266 Omega con
27	145	98.6	27	2 AAR13265	Aar13265 Omega con
28	145	98.6	27	2 AAR37768	Aar37768 SNX-196.
29	145	98.6	27	2 AAR37769	Aar37769 SNX-197.
30	145	98.6	27	2 AAW19561	Aaw19561 SNX-197,
31	145	98.6	27	2 AAW19560	Aaw19560 SNX-196,
32	145	98.6	27	3 AAY56488	Aay56488 Analogue
33	145	98.6	27	3 AAY56489	Aay56489 Analogue
34	145	98.6	29	3 AAY84655	Aay84655 Amino aci
35	145	98.6	32	3 AAY84656	Aay84656 Amino aci
36	145	98.6	32	3 AAY84654	Aay84654 Amino aci
37	142	96.6	25	2 AAR12547	Aar12547 Omega con
38	142	96.6	25	4 AAB97043	Aab97043 Omega-con
39	141	95.9	25	4 AAB97044	Aab97044 Omega-con
40	141	95.9	25	4 AAB97045	Aab97045 Omega-con
41	140	95.2	25	2 AAW12983	Aaw12983 Omega con
42	140	95.2	25	2 AAW72623	Aaw72623 Conus gen
43	140	95.2	25	2 AAW95582	Aaw95582 Analog om
44	140	95.2	25	3 AAB14368	Aab14368 Omega-con
45	140	95.2	25	4 AAB19460	Aab19460 Sequence
46	139	94.6	25	2 AAR12544	Aar12544 Omega con
47	139	94.6	25	2 AAR13264	Aar13264 Omega con
48	139	94.6	25	2 AAR12545	Aar12545 Omega con
49	139	94.6	25	2 AAR39625	Aar39625 SNX-198.
50	139	94.6	25	2 AAR39618	Aar39618 SNX-190.

ALIGNMENTS

RESULT 1
AAR39626
ID AAR39626 standard; peptide; 25 AA.
XX
AC AAR39626;
XX
DT 25-MAR-2003 (revised)
DT 20-DEC-1993 (first entry)
XX
DE SNX-200.
XX
KW Omega conopeptide; OCT; analgesia; inhibition; voltage-gated;
KW calcium channel; neurone; contraction; guinea pig; ileum; WIIIA;
KW binding site; toxin; marine; snail; Conus; opiod; chronic pain;
KW narcotics.
XX
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Disulfide-bond 1..16
FT Disulfide-bond 8..20
FT Disulfide-bond 15..25
FT Modified-site 25
/note= "Amidated C-terminal"

WO9313128-A1.
08-JUL-1993.
30-DEC-1992; 92WO-US011349.
30-DEC-1991; 91US-00814759.
(NEUR-) NEUREX CORP.
Justice A, Singh T, Gohil K, Valentino KL, Miljanich GP;
WPI; 1993-227270/28.
Use of omega-cono-peptide(s) which selectively inhibit voltage-gated
calcium channels - to induce analgesia, enhance opiate analgesics, treat
pain etc.

PS Claim 1; Fig 2; 90pp; English.

CC The sequences given in AAR39608-30 are omega conopeptides (OCTs) and derivatives of these, which may be used to produce analgesia in a mammal.

CC These OCTs inhibit voltage-gated calcium channels selectively in neuronal tissue. This is shown by the peptides ability to stimulate contraction in guinea pig ileum and to bind to OCT MVIIA binding sites present in neuronal tissue. OCTs are components of peptide toxins derived from marine snails of the genus Conus, and act as calcium channel blockers.

CC These OCTs may be used to replace opioids in the treatment of chronic pain or to reduce the opioid dosage required. This helps to reduce dependence on and tolerance to opioid narcotics. (Updated on 25-MAR-2003 to correct PN field.)

CC PN field.)

XX Sequence 25 AA;

SQ

Query Match 99.3%; Score 146; DB 2; Length 25;
Best Local Similarity 96.0%; Pred. No. 1.5e-09;
Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 CKGKGACSRMLMYDCTGSCRSKGC 25
Db 1 CKGKGACSRMLMYDCTGSCRSKGC 25

RESULT 2

AAR37771

ID AAR37771 standard; peptide; 25 AA.

XX

AC AAR37771;

XX

DT 25-MAR-2003 (revised)

DT 08-SEP-1993 (first entry)

XX

DE SNX-200.

XX

KW Ischaemia; neuronal; omega-conotoxin; OCT; MVIIA; MVIIC; MVIID; MVIIB; GVIA; GVIIA; RVIA; SVIA; TVIA; SVIB; SNX-207; stroke; delayed treatment; antihistamine; blood pressure; N-type voltage-gated Ca currents; N-channel mediated neurotransmitter release.

XX

OS Synthetic.

XX

XX Key Location/Qualifiers

PH Disulfide-bond 1..16

FT Disulfide-bond 8..20

FT Disulfide-bond 15..25

FT Disulfide-bond 15..25

XX

XX WO9310145-A1.

PN

XX

XX 27-MAY-1993.

XX

XX 12-NOV-1992; 92WO-US009766.

XX

XX 12-NOV-1991; 91US-00789913.

PR

PR 17-JUL-1992; 92US-00916478.

XX

XX (NEUR-) NEUREX CORP.

PA

XX

XX Miljanich GP, Bowersox SS, Fox JA, Valentino XL, Bitner RS;

PI Yamashiro DH;

PI

XX WPI; 1993-192487/22.

DR

XX

XX Redn. of neuronal damage caused by ischaemia - by admin. of cpds. that bind specifically to omega-conotoxin MVIIA binding sites.

PT

PT Disclosure; Fig 2; 103pp; English.

PS

XX

XX The C-terminal is amidated. Ischaemia-related neuronal damage in mammals is reduced by admin., 4-24 hr after onset of ischaemia, of a cpd. (I) which binds selectively to an omega-conotoxin (OCT) MVIIA site in neuronal tissue. (I) has selectivity at least 100 expressed as ratio of

CC

CC binding affinity for the MVIIA site to that for the MVIIC site. (I) is one of the OCTs MVIIA, MVIIB, GVIA, GVIIA or RVIA or it is the cpd. SNX-207. (I) is esp. used to reduce neuronal damage caused by stroke. By delaying admin. for some time (compare US5051403 where cpds. are given within 1 hr of the onset of ischaemia) a greater redn. in neuronal damage is achieved. (I) is admin. e.g. by intracerebroventricular (ICV) injection at 0.1-20 microg/kg, but can also be given i.v. (Opt. after treatment with antihistamines to minimise redn. in blood pressure caused by (I)). (I) is also at least as effective as the specified conotoxins for (1) selective inhibition of N-type voltage-gated Ca currents in neuronal tissue and (2) selective inhibition of N-channel mediated neurotransmitter release in neuronal tissue. Primary sequences of omega-conopeptides are given in AAR37752-62. Several analog omega-conopeptides are given in AAR37763-76. (Updated on 25-MAR-2003 to correct PN field.)

XX

SQ Sequence 25 AA;

Query Match 99.3%; Score 146; DB 2; Length 25;
Best Local Similarity 96.0%; Pred. No. 1.5e-09;
Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 CKGKGACSRMLMYDCTGSCRSKGC 25
Db 1 CKGKGACSRMLMYDCTGSCRSKGC 25

RESULT 3

AAR19564

ID AAR19564 standard; peptide; 25 AA.

XX

AC AAR19564;

XX

DT 14-OCT-1997 (first entry)

XX

DE SNX-200, omega conopeptide derivative used for pain relief.

XX

KW Conopeptide; cone snail; pain; analgesic; neuropathy; epidural; N-type voltage-sensitive calcium channel; block; Conus.

KW

XX Synthetic.

XX

XX Key Location/Qualifiers

PH Disulfide-bond 1..16

FT Disulfide-bond 8..20

FT Disulfide-bond 15..25

FT Modified-site 25 /note= "amidated"

XX

XX WO9701351-A1.

PN

XX

XX 16-JAN-1997.

XX

XX 26-JUN-1996; 96WO-US011041.

XX

XX 27-JUN-1995; 95US-00496847.

PR

PR 08-MAR-1996; 96US-00613400.

XX

XX (NEUR-) NEUREX CORP.

PA

XX

XX Amstutz GA, Bowersox SS, Gohil K, Adriaenssens PI, Kristipati R;

PI Gadbois T, Pettus MR, Luther RR;

PI

XX WPI; 1997-100012/09.

DR

XX

XX Stable omega conopeptide compositions - for producing analgesia and for inhibiting progression of neuropathic pain disorders.

PT

PT Disclosure; Fig 3; 47pp; English.

PS

XX

XX AAR19555-W19572 are omega conopeptides (OCs) derived from natural peptides from Conus sp. (cone snails). The peptides and their analogues are used as analgesics acting by blocking N-type voltage-sensitive calcium channels. The OCs can be used to treat neuropathic pain as a

CC

CC result of e.g. insult to the spinal cord or peripheral nerves, cancer,
 CC bone degenerative diseases, AIDS, reflex sympathetic dystrophy, herpes
 CC zoster neuropathy, diabetic neuropathy, hyperesthesia, allodynia or
 CC hyperalgesia. The Ocs are preferably administered in a medicament via an
 CC epidural route in a continuous infusion or sustained release formulation.
 CC The Ocs can provide pain relief when administered epidurally in the
 CC absence of a permeation enhancer, at doses that are comparable to
 CC effective analgesic doses using intrathecal administration. CC
 CC formulations comprising an OC and a carboxylic acid buffer anti-oxidant.
 CC They also confer stability to solutions containing them for prolonged
 CC treatment methods and long-term storage
 XX
 SQ Sequence 25 AA;

Query Match.. 99.3%; Score 146; DB 2; Length 25;

Best Local Similarity 96.0%; Pred. No. 1.5e-09;

Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 CKKGAXCSRLMYDCTGSCRSKGC 25

Db 1 CKKGGAACSRMLYDCTGSCRSKGC 25

RESULT 4

AAY56492

ID AAY56492 standard; peptide; 25 AA.

XX AC AAY56492;

DT 16-FEB-2000 (first entry)

DE Analogue omega conopeptide SNX-200.

KW Omega conopeptide; analgesic; nociceptive; neuropathic; pain; conotoxin;
 KW marine snail; peptide toxin; inflammation; binding;
 KW voltage-gated calcium channel; inhibition; norepinephrine; noradrenaline;
 KW anti-inflammatory.

XX Conus sp.

Key Location/Qualifiers

FT Disulfide-bond 1..16

FT Disulfide-bond 8..20

FT Disulfide-bond 15..25

FT Modified-site 25

FT /note= "amidated"

XX US5994305-A.

XX PD 30-NOV-1999.

XX PF 21-AUG-1998; 98US-00138439.

XX PR 30-DEC-1991; 91US-00814759.

XX PR 15-APR-1993; 93US-00049794.

XX PR 03-JUL-1996; 96US-00675354.

XX PR 01-NOV-1996; 96US-00742774.

XX (ELAN-) ELAN PHARM INC.

XX Justice A, Singh T, Valentino KL, Miljanich GP, Gohil KC;

XX WPI; 2000-038270/03.

XX Measuring the activity of test compounds in blocking voltage-gated

XX calcium channels, binding to the omega conopeptide binding site and

XX inhibiting norepinephrine (noradrenaline) release for treating

XX inflammation.

XX Disclosure; Fig 2; 47pp; English.

XX A method has been developed of selecting a test compound for treating

XX inflammation. The method comprises measuring the activity of the test

CC

CC compound in blocking voltage-gated calcium channels, binding to the omega
 CC conopeptide binding site and inhibiting norepinephrine (noradrenaline)
 CC release from nervous tissue. The method is useful for selecting compounds
 CC for treating inflammation. The selected compounds are capable of
 CC producing analgesia in a mammalian subject with chronic or intractable
 CC pain. Analgesia caused by selected compounds may reduce the reliance on
 CC opioid analgesic agents of the prior art which cause dependency and
 CC tolerance, requiring potentially dangerous increases in opioid doses to
 CC achieve the analgesic effect. The present sequence represents an omega
 CC conopeptide given in the present invention
 XX
 SQ Sequence 25 AA;

Query Match 99.3%; Score 146; DB 3; Length 25;

Best Local Similarity 96.0%; Pred. No. 1.5e-09;

Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 CKKGAXCSRLMYDCTGSCRSKGC 25

Db 1 CKKGGAACSRMLYDCTGSCRSKGC 25

RESULT 5

AAR39608

ID AAR39608 standard; peptide; 25 AA.

XX AC AAR39608;

XX DT 25-MAR-2003 (revised)

XX DT 20-DEC-1993 (first entry)

XX DE WIIIA/SNX111.

XX Omega conopeptide; OCT; analgesia; inhibition; voltage-gated;

XX calcium channel; neuropeptide; contraction; guinea pig; ileum; WIIIA;

XX binding site; toxin; marine; snail; Conus; opioid; chronic pain;

XX narcotics.

XX Synthetic.

XX Key Location/Qualifiers

FT Disulfide-bond 1..16

FT Disulfide-bond 8..20

FT Disulfide-bond 15..25

XX WO9313128-A1.

XX PD 08-JUL-1993.

XX PF 30-DEC-1992; 92WO-US011349.

XX PR 30-DEC-1991; 91US-00814759.

XX (NEUR-) NEUREX CORP.

XX Justice A, Singh T, Gohil K, Valentino KL, Miljanich GP;

XX WPI; 1993-227270/28.

XX Use of omega-cono-peptide(s) which selectively inhibit voltage-gated

XX calcium channels - to induce analgesia, enhance opiate analgesics, treat

XX pain etc.

XX Claim 1; Fig 1; 90pp; English.

XX The sequences given in AAR39608-30 are omega conopeptides (OCTs) and

XX derivatives of these, which may be used to produce analgesia in a mammal.

XX These OCTs inhibit voltage-gated calcium channels selectively in neuronal

XX tissue. This is shown by the peptides ability to stimulate contraction in

XX guinea pig ileum and to bind to OCT WIIIA binding sites present in

XX neuronal tissue. OCTs are components of peptide toxins derived from

XX marine snails of the genus Conus, and act as calcium channel blockers.

XX These OCTs may be used to replace opioids in the treatment of chronic pain

CC or to reduce the opiod dosage required. This helps to reduce dependence
CC on and tolerance to opiod narcotics. (Updated on 25-MAR-2003 to correct
CC PN field.)

XX SQ Sequence 25 AA;

Query Match	98.6%	Score 145	DB 2	Length 25
...

Best Local Similarity 96.0%; Pred. No. 2e-09;
Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 CKKGAXCSRLMYDCTTGSCRSKGC 25

Db 1 CCGKGAACSRRLMYDCTGSCRSK 25

RESULT 6
AAR37752

ID AAR37752 standard; peptide; 25 AA.
XX

AC AAR37752;
XX

DT	25-MAR-2003	(revised)
DT	08-SEP-1993	(first entry)

XX DE MVIIA/SNX-111.

XX Ischaemia; neuronal; omega-conotoxin; OCT; MVIIB; MVIIC; MVIID; MVIIB;
KW

KW GVIA; GVIIA; RVIA; SVIA; TVIA; SVIB; SNX-207; stroke; delayed treatment;
KW antihistamine; blood pressure; N-type voltage-gated Ca currents;

XX AAR76089;
 XX
 XX 27-AUG-2003 (revised)
 DT 25-MAR-2003 (revised)
 DT 02-FEB-1996 (first entry)
 XX
 DE Omega conotoxin MWIIA peptide.
 XX
 KW Omega conotoxin; marine snail; Conus; voltage-gated Ca channel blocker;
 KW synaptosome; membrane; fish electric organ; mammalian brain; ischaemia;
 KW binding protein; binding affinity; stroke.
 XX
 OS Conus.
 XX
 XX Key Location/Qualifiers
 FH Disulfide-bond 1. .16
 FT Disulfide-bond 8. .20
 FT Disulfide-bond 15. .25
 FT Modified-site 25
 FT /note= "amidated C-terminus"
 XX
 XX US5424218-A.
 PN
 XX
 PD 13-JUN-1995.
 XX
 XX 04-NOV-1993; 93US-00147714.
 PF
 XX 22-NOV-1989; 89US-00440094.
 PR
 PR 02-AUG-1990; 90US-00561766.
 PR
 PR 23-MAR-1992; 92US-00855269.
 XX
 XX (NEUR-) NEUREX CORP.
 PA
 XX
 XX Valentino KL, Bowersox SS, Bitner RS, Miljanich GP, Yamashiro DH;
 PI Fox JA;
 PI
 XX WPI; 1995-223694/29.
 DR
 XX
 XX Identifying cpds. able to reduce neuronal damage caused by ischaemia - by
 PT measuring their affinity to omega conotoxin MWIIA binding site and
 PT ability e.g. to inhibit voltage gated calcium channels.
 XX
 XX Disclosure; Fig 1; 31pp; English.
 PS
 XX The peptides AAR76089-95 are naturally occurring omega conotoxin (OCT)
 CC peptides derived from marine snails of the Conus genus. The peptide
 CC sequences were used to chemically synthesise the OCT peptide fragments
 CC AAR76098-R76109. The OCT peptides act as voltage-gated Ca channel
 CC blockers by binding to a 210 kD protein from synaptosomal membrane
 CC preparations from fish electric organ or mammalian brains. The peptides
 CC and their synthesised fragments can be used to screen for compounds that
 CC bind to the OCT binding protein, by displacing a high affinity labelled
 CC OCT, such as MWIIA, from a synaptosomal membrane preparation. The
 CC compounds should have binding affinities and activities at least equal to
 CC those of the natural peptides (Ki 0.44-324 nM). The screened compounds
 CC are potentially useful in treating ischaemic conditions, esp. stroke, and
 CC can reduce sec. anatomical and functional damage associated with those
 CC conditions. (Updated on 25-MAR-2003 to correct PF field.) (Updated on 27-
 CC AUG-2003 to correct OS field.)
 XX
 XX Sequence 25 AA;
 SQ
 Query Match 98.6%; Score 145; DB 2; Length 25;
 Best Local Similarity 96.0%; Pred. No. 2e-09;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
 QY 1 CKGKGAXCSRLMYDCTGSCRSKGC 25
 ||||| ||||| ||||| ||||| |||||
 Db 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 ||||| ||||| ||||| ||||| |||||
 RESULT 9
 AAW19569

AAW19544
 ID AAW19544 standard; peptide; 25 AA.
 XX
 XX AAW19544;
 AC
 XX 27-AUG-2003 (revised)
 DT 13-OCT-1997 (first entry)
 DT
 XX Natural omega-conopeptide MWIIA/SNX-111 used for pain relief.
 DE
 XX Conopeptide; cone snail; pain; analgesic; neuropathy; epidural;
 KW N-type voltage-sensitive calcium channel; block; Conus.
 KW
 XX Conus.
 OS
 XX
 XX Key Location/Qualifiers
 FH Disulfide-bond 1. .16
 FT Disulfide-bond 8. .20
 FT Disulfide-bond 15. .25
 FT Modified-site 25
 FT /note= "optionally amidated"
 XX
 XX WO9701351-A1.
 PN
 XX
 PD 16-JAN-1997.
 XX
 XX 26-JUN-1996; 96WO-US011041.
 PF
 XX 27-JUN-1995; 95US-00496847.
 PR
 PR 08-MAR-1996; 96US-00613400.
 PR
 XX (NEUR-) NEUREX CORP.
 PA
 XX
 XX Amstutz GA, Bowersox SS, Gohil K, Adriaenssens PL, Kristipati R;
 PI Gadbois T, Pettus MR, Luther RR;
 PI
 XX WPI; 1997-100012/09.
 DR
 XX
 XX Stable omega conopeptide compositions - for producing analgesia and for
 PT inhibiting progression of neuropathic pain disorders.
 PT
 XX Claim 3; Fig 1, Fig 3; 47pp; English.
 PS
 XX AAW19544-W19553 are naturally occurring omega conopeptides (OCs) isolated
 CC from Conus sp. (cone snails). The peptides and their analogues are used
 CC as analgesics acting by blocking N-type voltage-sensitive calcium
 CC channels. The OCs can be used to treat neuropathic pain as a result of
 CC e.g. insult to the spinal cord or peripheral nerves, cancer, bone
 CC degenerative diseases, AIDS, reflex sympathetic dystrophy, herpes zoster
 CC neuropathy, diabetic neuropathy, hyperesthesia, allodynia or
 CC hyperalgesia. The OCs are preferably administered in a medicament via an
 CC epidural route in a continuous infusion or sustained release formulation.
 CC The OCs can provide pain relief when administered epidurally in the
 CC absence of a permeation enhancer, at doses that are comparable to
 CC effective analgesic doses using intrathecal administration. OC
 CC formulations comprising an OC and a carboxylic acid buffer anti-oxidant.
 CC They also confer stability to solutions containing them for prolonged
 CC treatment methods and long-term storage. (Updated on 27-AUG-2003 to
 CC correct OS field.)
 XX
 XX Sequence 25 AA;
 SQ
 Query Match 98.6%; Score 145; DB 2; Length 25;
 Best Local Similarity 96.0%; Pred. No. 2e-09;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
 QY 1 CKGKGAXCSRLMYDCTGSCRSKGC 25
 ||||| ||||| ||||| ||||| |||||
 Db 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 ||||| ||||| ||||| ||||| |||||
 RESULT 10
 AAW19569

```

ID AAW19569 standard; peptide; 25 AA.
XX
AC AAW19569;
XX
DT 14-OCT-1997 (first entry)
XX
DE SNX-279, omega conopeptide derivative used for pain relief.
XX
KW Conopeptide; cone snail; pain; analgesic; neuropathy; epidural;
XX N-type voltage-sensitive calcium channel; block; Conus.
XX
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Disulfide-bond 1..16
FT Disulfide-bond 8..20
FT Misc-difference 12
FT /label= Met(O)
FT /note= "sulphoxymethionine"
FT Disulfide-bond 15..25
FT Modified-site 25
FT /note= "amidated"
XX
PN WO9701351-A1.
XX
PD 16-JAN-1997.
XX
PF 26-JUN-1996; 96WO-US011041.
XX
PR 27-JUN-1995; 95US-00496847.
PR 08-MAR-1996; 96US-00613400.
XX
PA (NEUR-) NEUREX CORP.
XX
PI Amstutz GA, Bowersox SS, Gohil K, Adriaenssens PI, Kristipati R;
PI Gadbois T, Pettus MR, Luther RR;
XX
DR WPI; 1997-100012/09.
XX
PT Stable omega conopeptide compositions - for producing analgesia and for
PT inhibiting progression of neuropathic pain disorders.
XX
PS Claim 3; Fig 3; 47pp; English.
XX
CC AAW19555-W19572 are omega conopeptides (OCs) derived from natural
CC peptides from Conus sp. (cone snails). The peptides and their analogues
CC are used as analgesics acting by blocking N-type voltage-sensitive
CC calcium channels. The OCs can be used to treat neuropathic pain as a
CC result of e.g. insult to the spinal cord or peripheral nerves, cancer,
CC bone degenerative diseases, AIDS, reflex sympathetic dystrophy, herpes
CC zoster neuropathy, diabetic neuropathy, hyperesthesia, allodynia or
CC hyperalgesia. The OCs are preferably administered in a medicament via an
CC epidural route in a continuous infusion or sustained release formulation.
CC The OCs can provide pain relief when administered epidurally in the
CC absence of a permeation enhancer, at doses that are comparable to
CC effective analgesic doses using intrathecal administration. OC
CC formulations comprising an OC and a carboxylic acid buffer anti-oxidant.
CC They also confer stability to solutions containing them for prolonged
CC treatment methods and long-term storage
XX
SQ Sequence 25 AA;
XX
Query Match 98.6%; Score 145; DB 2; Length 25;
Best Local Similarity 96.0%; Pred. No. 2e-09;
Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
OY 1 CKKGKAGCSRLMYDCTGSCRSKGC 25
DB 1 CKKGKAGCSRLMYDCTGSCRSKGC 25
XX
RESULT 11
AAW12967
XX
Query Match 98.6%; Score 145; DB 2; Length 25;
Best Local Similarity 96.0%; Pred. No. 2e-09;
Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
OY 1 CKKGKAGCSRLMYDCTGSCRSKGC 25
DB 1 CKKGKAGCSRLMYDCTGSCRSKGC 25
XX
RESULT 12
AAW72605
ID AAW72605 standard; peptide; 25 AA.
XX
AC AAW72605;
XX
DT 27-AUG-2003 (revised)
DT 06-JAN-1999 (first entry)
XX
DE Conus genus natural omega-conopeptide MVIIA/SNX-111.
XX
KW Conus genus; marine snail; cone snail; omega-conopeptide; analgesia;
KW nociceptive pain; neuropathic pain; neuronal tissue; conotoxin;
KW inflammation; schizophrenia; tardive dyskinesia; acute dystonic reaction;
KW rheumatoid arthritis; epilepsy.
XX
OS Conus.
XX

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ID AAW12967 standard; peptide; 25 AA.
XX
AC AAW12967;
XX
DT 25-MAR-2003 (revised)
DT 22-APR-1997 (first entry)
XX
DE Omega conopeptide SNX-111.
XX
KW Omega conopeptide; analgesic; treatment; neuropathic pain; inhibition;
KW neuronal damage; schizophrenia; tardive dyskinesia; analgesia;
KW acute dystonic reactions; inflammation; epilepsy.
XX
OS Synthetic.
XX
PN US5587454-A.
XX
PD 24-DEC-1996.
XX
PF 15-APR-1993; 93US-00049794.
XX
PR 30-DEC-1991; 91US-00814759.
PR 30-DEC-1992; 92WO-US011349.
XX
PA (NEUR-) NEUREX CORP.
XX
PI Gohil KC, Miljanich GP, Valentino KL, Justice A, Singh T;
XX
DR WPI; 1997-064830/06.
XX
PT Omega conopeptide(s) - useful as analgesics, esp. for treating
PT neuropathic pain.
XX
PS Example 1; Col 39-40; 58pp; English.
XX
CC The present peptide is an omega conopeptide, useful as an analgesic,
CC especially for treating neuropathic pain. The peptide, which can be
CC prepared by solid phase synthesis, can also be used to inhibit neuronal
CC damage and treat schizophrenia, tardive dyskinesia, acute dystonic
CC reactions, inflammation and epilepsy. In a rat paw formalin test, the
CC peptide had an ED50 of 0.011 microg in phase 1, and 0.011 microg in phase
CC 2 (by intrathecal administration). (Updated on 25-MAR-2003 to correct PF
CC field.)
XX
SQ Sequence 25 AA;
XX
Query Match 98.6%; Score 145; DB 2; Length 25;
Best Local Similarity 96.0%; Pred. No. 2e-09;
Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
OY 1 CKKGKAGCSRLMYDCTGSCRSKGC 25
DB 1 CKKGKAGCSRLMYDCTGSCRSKGC 25
XX
RESULT 12
AAW72605
ID AAW72605 standard; peptide; 25 AA.
XX
AC AAW72605;
XX
DT 27-AUG-2003 (revised)
DT 06-JAN-1999 (first entry)
XX
DE Conus genus natural omega-conopeptide MVIIA/SNX-111.
XX
KW Conus genus; marine snail; cone snail; omega-conopeptide; analgesia;
KW nociceptive pain; neuropathic pain; neuronal tissue; conotoxin;
KW inflammation; schizophrenia; tardive dyskinesia; acute dystonic reaction;
KW rheumatoid arthritis; epilepsy.
XX
OS Conus.
XX

```

PN US5824645-A.
 XX 20-OCT-1998.
 PD
 PF
 XX 01-NOV-1996; 96US-00742774.
 XX
 PR 30-DEC-1991; 91US-00814759.
 PR 15-APR-1993; 93US-00049794.
 PR 03-JUL-1996; 96US-00675354.
 XX
 XX (NEUR-) NEUREX CORP.
 PA
 XX Miljanich GP, Valentino KL, Gohil KC, Justice A, Singh T;
 PI WPI; 1998-582596/49.
 XX
 DR Treatment of inflammation, comprises administration of omega-conopeptide
 XX - effective to block voltage-gated calcium channels, bind with high
 PT affinity to omega-conopeptide binding site, and inhibit neuro-transmitter
 PT release.
 XX
 PS Disclosure; Fig 1; 58pp; English.
 XX
 CC A method has been developed for the treatment of inflammation in a
 CC subject. The method comprises administration of an omega-conopeptide
 CC effective to: (i) block voltage-gated calcium channels; (ii) bind with
 CC high affinity to an omega-conopeptide binding site; and (iii) inhibit
 CC neurotransmitter release from nervous tissue. The method is used to treat
 CC inflammation and associated pain. The treatment can also be used to
 CC produce analgesia (especially in subjects experiencing neuropathic pain);
 CC and to treat schizophrenia, tardive dyskinesia and acute dystonic
 CC reactions, rheumatoid arthritis, and epilepsy. The present sequence
 CC represents a natural omega-conopeptide. Omega-conopeptides are components
 CC of peptide toxins produced by marine snails of the genus Conus, and which
 CC act as calcium channel blockers. (Updated on 27-AUG-2003 to correct OS
 CC field.)
 XX
 SQ Sequence 25 AA;
 Query Match 98.6%; Score 145; DB 2; Length 25;
 Best Local Similarity 96.0%; Pred. No. 2e-09;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
 OY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 RESULT 13
 AA95564
 ID AA95564 standard; protein; 25 AA.
 XX
 AC AA95564;
 XX
 DT 29-MAR-1999 (first entry)
 XX
 DE Omega-conopeptide MVIIA/SNX-111.
 XX
 KW Omega-conopeptide; peptide toxin; snail; calcium channel blocker;
 KW analgesia; guinea pig ileum; omega-conotoxin; pain; neuropathic.
 XX
 OS Synthetic.
 OS Conus sp.
 XX
 XX Key Location/Qualifiers
 FT Modified-site 25
 FT /note= "C-terminal amide"
 XX
 PN US5859186-A.
 XX
 PD 12-JAN-1999.
 XX
 PF 03-JUL-1996; 96US-00675354.

XX 30-DEC-1991; 91US-00814759.
 PR 15-APR-1993; 93US-00049794.
 XX
 PA (NEUR-) NEUREX CORP.
 XX
 PI Miljanich GP, Gohil KC, Valentino KL, Justice A, Singh T;
 XX WPI; 1999-120002/10.
 DR
 XX Production of analgesia in mammal - by administration of omega cono-
 PT peptide(s).
 PT
 XX Claim 3; Fig 1; 59pp; English.
 PS
 XX
 CC Sequences AA95564-573 represent primary sequences of natural omega-
 CC conopeptides. Omega-conopeptides are components of peptide toxins
 CC produced by marine snails of the genus Conus, and which act as calcium
 CC channel blockers. The invention relates to a method of producing
 CC analgesia in a mammal that comprises administering an omega conopeptide
 CC having activities in (a) inhibiting electrically stimulated contraction
 CC of guinea pig ileum and (b) selectively binding to omega conopeptide
 CC MVIIA binding sites in neuronal tissue, where these activities are within
 CC the ranges of those of omega-conotoxins MVIIA and TVIA. The method is
 CC used for treating chronic pain, especially neuropathic pain. The present
 CC sequence is a specifically claimed example of an omega-conopeptide that
 CC can be used in the method of the invention
 XX
 SQ Sequence 25 AA;
 Query Match 98.6%; Score 145; DB 2; Length 25;
 Best Local Similarity 96.0%; Pred. No. 2e-09;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
 OY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 RESULT 14
 AA42335
 ID AA42335 standard; peptide; 25 AA.
 XX
 AC AA42335;
 XX
 DT 20-DEC-1999 (first entry)
 XX
 DE Omega-conotoxin OCT MVIIA.
 XX
 KW Calcium channel; neuron; retina; optic nerve; trauma; ischaemia; vision;
 KW prevention.
 XX
 OS Conus sp.
 XX
 XX Key Location/Qualifiers
 FT Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 FT Misc-difference 25
 FT /note= "Optionally contains C-terminal amide"
 XX
 PN US5965534-A.
 XX
 PD 12-OCT-1999.
 XX
 PF 13-MAR-1998; 98US-00039169.
 XX
 PR 22-NOV-1995; 95US-00562142.
 XX
 PA (ALCO-) ALCON LAB INC.
 XX
 PI Hellberg M, Pang I, Kapin M;
 XX

DR WPI; 1999-579926/49.
 XX Treatment or prevention of retinal or optic nerve head damage comprises
 PT administration of an omega-conotoxin derivative.
 XX Claim 2; Col 3-4; 7pp; English.
 XX This sequence represents omega-conotoxin OCT MVIIA. Omega-conotoxins
 CC selectively block N-type calcium channels responsible for calcium influx
 CC in neurons. Acute retinal or optic nerve damage, which can result in the
 CC loss of vision, is caused by acute trauma and pathological events such as
 CC ischaemia, hypoxia or oedema. The release of excitatory amino acids is
 CC implicated in ischaemia-related neuronal and retinal damage, with
 CC excitatory amino acid release leading to excessive stimulation of post-
 CC synaptic excitatory amino acid receptors, which can result in cell
 CC injury. The release of such excitatory amino acids from presynaptic nerve
 CC terminals is dependent upon an elevation of calcium in the nerve
 CC terminal. This presynaptic calcium influx is mediated by the N-type
 CC calcium channels that are inhibited by omega-conotoxins. Intraocular
 CC administration of at least one omega-conotoxin could be used for the
 CC treatment or prevention of retinal or optic nerve head damage resulting
 CC from acute traumatic or acute ischaemic events
 XX
 SQ Sequence 25 AA;

Query Match 98.6%; Score 145; DB 2; Length 25;
 Best Local Similarity 96.0%; Pred. No. 2e-09; 1; Indels 0; Gaps 0;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
 QY 1 CKGKGACSRMLMYDCTGSCRSKGC 25
 DB 1 CKGKGACSRMLMYDCTGSCRSKGC 25

RESULT 15
 ID AAY56473
 AC AAY56473; peptide; 25 AA.
 DT 16-FEB-2000 (first entry)
 DE Natural omega conopeptide MVIIA/SNX-111.
 KW Omega conopeptide; analgesic; nociceptive; neuropathic; pain; conotoxin;
 KW marine snail; peptide toxin; inflammation; binding;
 KW voltage-gated calcium channel; inhibition; norepinephrine; noradrenaline;
 KW anti-inflammatory.
 XX Conus sp.
 XX US5994305-A.
 XX 30-NOV-1999.
 XX 21-AUG-1998; 98US-00138439.
 XX 30-DEC-1991; 91US-00814759.
 XX 15-APR-1993; 93US-00049794.
 XX 03-JUL-1996; 96US-00675354.
 XX 01-NOV-1996; 96US-00742774.
 XX (ELAN-) ELAN PHARM INC.
 XX Justice A, Singh T, Valentino KL, Miljanich GP, Gohil KC;
 XX WPI; 2000-038270/03.
 XX Measuring the activity of test compounds in blocking voltage-gated
 PT calcium channels, binding to the omega conopeptide binding site and
 PT inhibiting norepinephrine (noradrenaline) release for treating
 PT inflammation.
 XX

PS Disclosure; Fig 1; 47pp; English.
 XX A method has been developed of selecting a test compound for treating
 CC inflammation. The method comprises measuring the activity of the test
 CC compound in blocking voltage-gated calcium channels, binding to the omega
 CC conopeptide binding site and inhibiting norepinephrine (noradrenaline)
 CC release from nervous tissue. The method is useful for selecting compounds
 CC for treating inflammation. The selected compounds are capable of
 CC producing analgesia in a mammalian subject with chronic or intractable
 CC pain. Analgesia caused by selected compounds may reduce the reliance on
 CC opioid analgesic agents of the prior art which cause dependency and
 CC tolerance, requiring potentially dangerous increases in opioid doses to
 CC achieve the analgesic effect. The present sequence represents an omega
 CC conopeptide given in the present invention
 XX
 SQ Sequence 25 AA;

Query Match 98.6%; Score 145; DB 3; Length 25;
 Best Local Similarity 96.0%; Pred. No. 2e-09;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
 QY 1 CKGKGACSRMLMYDCTGSCRSKGC 25
 DB 1 CKGKGACSRMLMYDCTGSCRSKGC 25

RESULT 16
 ID AAY43714
 AC AAY43714; standard; peptide; 25 AA.
 DT 11-FEB-2000 (first entry)
 DE Amino acid sequence of an omega-conotoxin MVIIA (SNX-III).
 KW Omega-conotoxin; venom; predatory marine snail; N-type calcium channel;
 KW neuronal damage reduction; ischemia; analgesia; opiate analgesia;
 KW schizophrenia; stimulant induced psychosis; hypertension; inflammation;
 KW bronchotension; neuropathic pain; voltage sensitive calcium channel.
 XX Conus magus.
 XX WO9954350-A1.
 XX 28-OCT-1999.
 XX 16-APR-1999; 99WO-AU000288.
 XX 16-APR-1998; 98AU-00002989.
 XX 01-FEB-1999; 99AU-00008419.
 XX (UYQU) UNIV QUEENSLAND.
 XX Drinkwater RD, Lewis RJ, Alewood PF, Nielsen KJ;
 XX WPI; 2000-013226/01.
 XX Novel peptides used for the treatment of disorders and diseases where
 PT blockage of the N-type calcium channels is required.
 XX Disclosure; Page 12; 81pp; English.
 XX The present sequence represents an omega-conotoxin. Omega-conotoxins are
 CC isolated from venoms of predatory marine snails, and have a selectivity
 CC for N-type calcium channels over P/Q type channels, and so block N-type
 CC calcium channels. The omega-conotoxins of the invention can be used in
 CC any disease or disorder where blockage of N-type calcium channels is
 CC required, e.g. in the reduction of neuronal damage following ischemia,
 CC production of analgesia, or enhancement of opiate analgesia, in the
 CC treatment of schizophrenia, stimulant induced psychosis, hypertension,
 CC inflammation, and diseases which cause bronchotension, and also in the
 CC inhibition of progression of neuropathic pain. They can also be used in a

CC screen to identify compounds with activity at N-type voltage sensitive
CC calcium channels
XX
SQ Sequence 25 AA;
Query Match 98.6%; Score 145; DB 3; Length 25;
Best Local Similarity 96.0%; Pred. No. 2e-09; Length 25;
Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
QY 1 CKGKAGKCSRLMYDCTGSCRSKGC 25
DB 1 CKGKAGKCSRLMYDCTGSCRSKGC 25
RESULT 17
AAB14352
ID AAB14352 standard; peptide; 25 AA.
XX
AC AAB14352;
XX
DT 06-DEC-2000 (first entry)
DE Omega-conopeptide MVIIA/SNX-111.
XX Marine snail; omega-conopeptide; calcium channel blocker; MVIIA; SNX-111;
KW toxin; analgesic; antiinflammatory; anticonvulsant; neuroleptic;
KW norepinephrine release inhibitor; schizophrenia; tardive dyskinesia;
KW acute dystonic reaction; inflammation; epilepsy.
XX Conus sp.
XX
FH Key Location/Qualifiers
FT Disulfide-bond 1..16
FT Disulfide-bond 8..20
FT Disulfide-bond 15..25
FT Modified-site 25 /note= "C-terminal amide"
XX
PN US6087091-A.
XX
PD 11-JUL-2000.
XX
PF 23-APR-1999; 99US-00298017.
XX
PR 30-DEC-1991; 91US-00814759.
PR 15-APR-1993; 93US-00049794.
PR 03-JUL-1996; 96US-00675354.
PR 01-NOV-1996; 96US-00742774.
PR 21-AUG-1998; 98US-00138439.
XX
PA (ELAN-) ELAN PHARM INC.
XX
PI Singh T, Gohil KC, Valentino KL, Miljanich GP, Justice A;
XX
DR WPI; 2000-490177/43.
XX
PT Selecting a compound for producing analgesia involves measuring activity
PT of test compound in blocking voltage-gated calcium channels, binding to
PT omega conopeptide binding site and inhibiting norepinephrine release.
XX
PS Example 1; Fig 1; 58pp; English.
XX
CC The present sequence is an omega-conopeptide from marine snails of the
CC genus Conus. Omega-conopeptides are components of peptide toxins produced
CC by the cone snails, and which act as calcium channel blockers. Natural
CC omega-conopeptides and their derivatives may be useful for producing
CC analgesia in nociceptive and neuropathic pain. The peptides bind to omega
CC -conopeptide binding sites, which are present mainly in neuronal tissue,
CC and inhibit norepinephrine release from nervous tissue. Conopeptides such
CC as MVIIA and TWIA are effective as therapeutic agents for treating
CC neurogenic conditions such as schizophrenia, tardive dyskinesia and acute
CC dystonic reactions, inflammation and epilepsy
XX

SQ Sequence 25 AA;
Query Match 98.6%; Score 145; DB 3; Length 25;
Best Local Similarity 96.0%; Pred. No. 2e-09; Length 25;
Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
QY 1 CKGKAGKCSRLMYDCTGSCRSKGC 25
DB 1 CKGKAGKCSRLMYDCTGSCRSKGC 25
RESULT 18
AAB92219
ID AAB92219 standard; peptide; 25 AA.
XX
AC AAB92219;
XX
DT 22-JUN-2001 (first entry)
XX
DE Toxin peptide SEQ ID NO:1395.
XX
KW Protection; endogenous therapeutic peptide; peptidase; conjugation;
KW blood component; modification; succinimidy; maleimido group; amino;
KW hydroxyl; thiol; hormone; growth factor; neurotransmitter.
XX Homo sapiens.
OS Synthetic.
XX
PN WO200069900-A2.
XX
PD 23-NOV-2000.
XX
PF 17-MAY-2000; 2000WO-US013576.
XX
PR 17-MAY-1999; 99US-0134406P.
PR 10-SEP-1999; 99US-0153406P.
PR 15-OCT-1999; 99US-0159783P.
XX
PA (CONJ-) CONJUCHEM INC.
XX
PI Bridon DP, Ezrin AM, Milner PG, Holmes DL, Thibaudeau K;
XX
DR WPI; 2001-112059/12.
XX
PT Modifying and attaching therapeutic peptides to albumin prevents
PT peptidase degradation, useful for increasing length of in vivo activity.
XX
PS Disclosure; Page 653; 733pp; English.
XX
CC The present invention describes a modified therapeutic peptide (I)
CC comprising a therapeutically active amino acid region (iii) and a
CC reactive group (ii) (e.g. succinimidy and maleimido groups) attached to
CC a less therapeutically active amino acid region (iv), which covalently
CC bonds with amino/hydroxyl/thiol groups on blood components to form a
CC peptidase stabilised therapeutic peptide composed of 3-50 amino acids.
CC (i) are useful for modifying therapeutic peptides e.g. hormones, growth
CC factors and neurotransmitters, to protect them from peptidase activity in
CC vivo for the treatment of various disorders. Endogenous therapeutic
CC peptides are not suitable as drug candidates as they require frequent
CC administration due to rapid degradation by peptidases in the body.
CC Modifying and attaching therapeutic peptides to albumin prevents or
CC reduces the action of peptidases to increase length of activity (half
CC life) and specificity as bonding to large molecules decreases
CC intracellular uptake and interference with physiological processes.
CC AAB90829 to AAB92441 represent peptides which can be used in the
CC exemplification of the present invention
XX
SQ Sequence 25 AA;
Query Match 98.6%; Score 145; DB 4; Length 25;
Best Local Similarity 96.0%; Pred. No. 2e-09; Length 25;
Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

XX Conus sp.
 OS JP2002080499-A.
 PN 19-MAR-2002.
 PD 01-SEP-2000; 2000JP-00266187.
 PF 01-SEP-2000; 2000JP-00266187.
 PR 01-SEP-2000; 2000JP-00266187.
 XX (SUNR) SUNTORY LTD.
 XX WPI; 2002-421068/45.
 DR A new peptide derived from venomous saliva of assassin bug, has calcium
 XX channel blocking activity.
 PT Disclosure; Page 4; 26pp; Japanese.
 PS The invention comprises peptides having calcium channel blocking
 XX activities which are derived from the venomous saliva of assassin bugs.
 CC The calcium channel blocking peptides of the invention are useful for
 CC treating stenocardia, hypertension, myocarditis, arrhythmia and cerebral
 CC ischaemia. The present amino acid sequence represents a cone snail w-
 CC conotoxin peptide
 XX Sequence 25 AA;
 SQ Query Match 98.6%; Score 145; DB 5; Length 25;
 Best Local Similarity 96.0%; Pred. No. 2e-09; Length 25;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 CRKGKAGCSRLMYDCTGSCRSKGC 25
 DB 1 CRKGKAGCSRLMYDCTGSCRSKGC 25

RESULT 22
 AAR12546
 ID AAR12546 standard; protein; 26 AA.
 XX AAR12546;
 AC AAR12546;
 XX 05-SEP-1991 (first entry)
 DT Omega conotoxin peptide analogue MVIIA(193).
 DE neuronal calcium-channel antagonist; OCT; adrenaline release;
 KW neuroprotective.
 XX Synthetic.
 OS Key Location/Qualifiers
 FH Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 XX WO9107980-A.
 PN 13-JUN-1991.
 PD 22-NOV-1989; 89US-00440094.
 PF 22-NOV-1989; 89US-00440094.
 PR (NEUR-) NEUREX CORP.
 XX Miljanjich GP, Bitner RS, Bowersox SS, Fox JA, Valentino XL;
 PI Yamashiro DH;
 XX WPI; 1991-192969/26.
 DR

PT Compens. for reducing ischaemia-related neuronal damage - contains
 PT neuronal channel antagonist omega conotoxin peptide which blocks
 PT norepinephrine release in central nervous system neuronal cells.
 XX Disclosure; Fig 2; 74pp; English.
 XX MVIIA(193) is an analogue of OCT peptide MVIIA in which a Gly residue is
 CC added to the C-terminus. The analogue gave IC(50) for inhibition of
 CC adrenaline release and Ki values within the ranges of those of OCT
 CC peptides MVIIA, GVIA, and/or TVIA. It is thus a candidate for a
 CC neuroprotective compound. See also AAR12542-5, AAR12547 and AAR13264-6
 XX Sequence 26 AA;
 SQ Query Match 98.6%; Score 145; DB 2; Length 26;
 Best Local Similarity 96.0%; Pred. No. 2.1e-09;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 CRKGKAGCSRLMYDCTGSCRSKGC 25
 DB 1 CRKGKAGCSRLMYDCTGSCRSKGC 25

RESULT 23
 AAR37765
 ID AAR37765 standard; peptide; 26 AA.
 XX AAR37765;
 AC AAR37765;
 XX 25-MAR-2003 (revised)
 DT 08-SEP-1993 (first entry)
 XX SNX-193.
 DE Ischaemia; neuronal; omega-conotoxin; OCT; MVIIA; MVIIC; MVIID; MVIIB;
 KW GVIA; GVIA; RVIA; SVIA; TVIA; SVIB; SNX-207; stroke; delayed treatment;
 KW antihistamine; blood pressure; N-type voltage-gated Ca currents;
 KW N-channel mediated neurotransmitter release.
 XX Synthetic.
 OS Key Location/Qualifiers
 FH Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 XX WO9310145-A1.
 PN 27-MAY-1993.
 PD 12-NOV-1992; 92WO-US009766.
 PF 12-NOV-1991; 91US-00789913.
 PR 17-JUL-1992; 92US-00916478.
 XX (NEUR-) NEUREX CORP.
 XX Miljanich GP, Bowersox SS, Fox JA, Valentino XL, Bitner RS;
 PI Yamashiro DH;
 XX WPI; 1993-182487/22.
 DR Redn. of neuronal damage caused by ischaemia - by admin. of cpds. that
 PT bind specifically to omega-conotoxin MVIIA binding sites.
 XX Disclosure; Fig 2; 103pp; English.
 PS Ischaemia-related neuronal damage in mammals is reduced by admin., 4-24
 CC hr after onset of ischaemia, of a cpd. (I) which binds selectively to an
 CC omega-conotoxin (OCT) MVIIA site in neuronal tissue. (I) has selectivity
 CC at least 100 expressed as ratio of binding affinity for the MVIIA site to
 CC that for the MVIIC site. (I) is one of the OCTs MVIIA, MVIIB, GVIA, GVIA
 CC or RVIA or it is the cpd. SNX-207. (I) is esp. used to reduce neuronal

CC damage caused by stroke. By delaying admin. for some time (compare
 CC US051403 where cpds. are given within 1 hr of the onset of ischaemia) a
 CC greater retn. in neuronal damage is achieved. (1) is admin. e.g. by
 CC intracerebroventricular (ICV) injection at 0.1-20 microg/kg, but can also
 CC be given i.v. (opt. after treatment with antihistamines to minimise retn.
 CC in blood pressure caused by (1)). (1) is also at least as effective as
 CC the specified conotoxins for (1) selective inhibition of N-type voltage-
 CC gated Ca currents in neuronal tissue and (2) selective inhibition of N-
 CC channel mediated neurotransmitter release in neuronal tissue. Primary
 CC sequences of omega-conopeptides are given in AAR37752-62. Several analog
 CC omega-conopeptides are given in AAR37763-76. (Updated on 25-MAR-2003 to
 CC correct PN field.)
 CC
 XX Sequence 26 AA;
 SQ

Query Match 98.6%; Score 145; DB 2; Length 26;
 Best Local Similarity 96.0%; Pred. No. 2.1e-09;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

OY 1 CKGKGACSRMLYDCTGSCRSKGC 25
 DB 1 CKGKGACSRMLYDCTGSCRSKGC 25

RESULT 24

AAW19557
 ID AAW19557 standard; peptide; 26 AA.

XX AAW19557;

DT 14-OCT-1997 (first entry)

DE SNX-193, omega conopeptide derivative used for pain relief.

KW Conopeptide; cone snail; pain; analgesic; neuropathy; epidural;
 KW N-type voltage-sensitive calcium channel; block; Conus.

OS Synthetic.

PH Key Location/Qualifiers

FT Disulfide-bond 1. .16

FT Disulfide-bond 8. .20

FT Disulfide-bond 15. .25

PN WO9701351-A1.

PD 16-JAN-1997.

XX 26-JUN-1996; 96WO-US011041.

XX 27-JUN-1995; 95US-00496847.

XX 08-MAR-1996; 96US-00613400.

XX (NEUR-) NEUREX CORP.

XX Amstutz GA, Bowersox SS, Gohil K, Adriaenssens PI, Kristipati R;
 XX Gadbois T, Pettus MR, Luther RR;

XX WPI; 1997-100012/09.

XX Stable omega conopeptide compositions - for producing analgesia and for
 XX inhibiting progression of neuropathic pain disorders.

XX Disclosure; Fig 3; 47pp; English.

XX AAW19555-W19572 are omega conopeptides (OCs) derived from natural
 CC peptides from Conus sp. (cone snails). The peptides and their analogues
 CC are used as analgesics acting by blocking N-type voltage-sensitive
 CC calcium channels. The OCs can be used to treat neuropathic pain as a
 CC result of e.g. insult to the spinal cord or peripheral nerves, cancer,
 CC bone degenerative diseases, AIDS, reflex sympathetic dystrophy, herpes
 CC zoster neuropathy, diabetic neuropathy, hyperesthesia, allodynia or
 CC hyperalgesia. The OCs are preferably administered in a medicament via an

CC epidural route in a continuous infusion or sustained release formulation.
 CC The OCs can provide pain relief when administered epidurally in the
 CC absence of a permeation enhancer, at doses that are comparable to
 CC effective analgesic doses using intrathecal administration. OC
 CC formulations comprising an OC and a carboxylic acid buffer anti-oxidant.
 CC They also confer stability to solutions containing them for prolonged
 CC treatment methods and long-term storage

SQ Sequence 26 AA;

Query Match 98.6%; Score 145; DB 2; Length 26;
 Best Local Similarity 96.0%; Pred. No. 2.1e-09;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

OY 1 CKGKGACSRMLYDCTGSCRSKGC 25

DB 1 CKGKGACSRMLYDCTGSCRSKGC 25

RESULT 25

AAW56485

ID AAY56485 standard; peptide; 26 AA.

XX AAY56485;

DT 16-FEB-2000 (first entry)

DE Analogue omega conopeptide SNX-193.

KW Omega conopeptide; analgesic; nociceptive; neuropathic; pain; conotoxin;
 KW marine snail; peptide toxin; inflammation; binding;
 KW voltage-gated calcium channel; inhibition; norepinephrine; noradrenaline;
 KW anti-inflammatory.

OS Conus sp.

PH Key Location/Qualifiers

FT Disulfide-bond 1. .16

FT Disulfide-bond 8. .20

FT Disulfide-bond 15. .25

XX US5994305-A.

XX 30-NOV-1999.

XX 21-AUG-1998; 98US-00138439.

XX 30-DEC-1991; 91US-00814759.

XX 15-APR-1993; 93US-00049794.

XX 03-JUL-1996; 96US-00675354.

XX 01-NOV-1996; 96US-00742774.

XX (ELAN-) ELAN PHARM INC.

XX Justice A, Singh T, Valentino KL, Miljanich GP, Gohil KC;

XX WPI; 2000-038270/03.

XX Measuring the activity of test compounds in blocking voltage-gated
 XX calcium channels, binding to the omega conopeptide binding site and
 XX inhibiting norepinephrine (noradrenaline) release for treating
 XX inflammation.

XX Disclosure; Fig 2; 47pp; English.

XX A method has been developed of selecting a test compound for treating
 CC inflammation. The method comprises measuring the activity of the test
 CC compound in blocking voltage-gated calcium channels, binding to the omega
 CC conopeptide binding site and inhibiting norepinephrine (noradrenaline)
 CC release from nervous tissue. The method is useful for selecting compounds
 CC for treating inflammation. The selected compounds are capable of
 CC producing analgesia in a mammalian subject with chronic or intractable
 CC pain. Analgesia caused by selected compounds may reduce the reliance on


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Db          3   CKGKGAKCSRLMYDCCCTGSCRSKGC 27  
||||| ||||| ||||| ||||| ||||| |||||  
  
RESULT 27  
AAR13265  
ID AAR13265 standard; protein; 27 AA.  
XX AC  
XX AAR13265;  
XX XX  
DT 05-SEP-1991 (first entry)  
XX XX  
DE Omega conotoxin peptide analogue MWIIA(196).  
XX XX  
KW neuronal calcium-channel antagonist; OCT; adrenaline release;  
KW neuroprotective.  
XX OS  
XX Synthetic.  
XX XX  
FH Key Location/Qualifiers  
FT Disulfide-bond 2..17  
FT FT Disulfide-bond 9..21  
FT FT Disulfide-bond 16..26  
XX XX  
PN WO9107980-A.  
XX XX  
PD 13-JUN-1991.  
XX XX  
PF 22-NOV-1989; 89US-00440094.  
XX XX  
PR 22-NOV-1989; 89US-00440094.  
XX XX  
PA (NEUR-) NEUREX CORP.  
XX XX  
PI Miljanjich GP, Bitner RS, Bowersox SS, Fox JA, Valentino KL;  
PI Yamashiro DH;  
XX XX  
DR WPI; 1991-192969/26.  
XX XX  
PT Companion. for reducing ischaemia-related neuronal damage - contains  
PT neuronal channel antagonist omega conotoxin peptide which blocks  
PT norepinephrine release in central nervous system neuronal cells.  
XX XX  
PS Disclosure; Fig 2; 74pp; English.  
XX XX  
CC MWIIA(196) is an analogue of OCT peptide MWIIA in which an Asn residue is  
CC addede to the N-terminus and a Gly residue is added to the C-terminus.  
CC The analogue gave IC(50) for inhibition of adrenaline release and Ki  
CC values within the ranges of those of OCT peptides MWIIA, GVIA, and/or  
CC TVIA. It is thus a candidate for a neuroprotective compound. See also  
CC AAR12542-7, AAR13264 and AAR13266  
XX XX  
SQ Sequence 27 AA;  
  
Query Match 98.6%; Score 145; DB 2; Length 27;  
Best Local Similarity 96.0%; Pred. NO. 2.le-09;  
Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;  
  
QY 1 CKGKGAKCSRLMYDCCCTGSCRSKGC 25  
      ||||| ||||| ||||| ||||| ||||| |||||  
DB 2 CKGKGAKCSRLMYDCCCTGSCRSKGC 26  
  
RESULT 28  
AAR37768  
ID AAR37768 standard; peptide; 27 AA.  
XX AC  
XX AAR37768;  
XX XX  
DT 25-MAR-2003 (revised)  
DT 08-SEP-1993 (first entry)  
XX XX  
DE SNX-196.
```


DE SNX-197, omega conopeptide derivative used for pain relief.
 XX Conopeptide; cone snail; pain; analgesic; neuropathy; epidural;
 KW N-type voltage-sensitive calcium channel; block; Conus.
 XX Synthetic.
 XX Key Location/Qualifiers
 FH Disulfide-bond 3. .18
 FT Disulfide-bond 10. .22
 FT Disulfide-bond 17. .27
 FT Modified-site 27
 FT /note= "amidated"
 XX
 PN WO9701351-A1.
 XX
 XX 16-JAN-1997.
 XX
 XX 26-JUN-1996; 96WO-US011041.
 XX
 XX 27-JUN-1995; 95US-00496847.
 PR 08-MAR-1996; 96US-00613400.
 XX
 XX (NEUR-) NEUREX CORP.
 XX
 XX Amstutz GA, Bowersox SS, Gohil K, Adriaenssens PI, Kristipati R;
 PI Gadbois T, Pettus MR, Luther RR;
 XX
 XX WPI; 1997-100012/09.
 XX
 XX Stable omega conopeptide compositions - for producing analgesia and for
 PT inhibiting progression of neuropathic pain disorders.
 PT
 XX Disclosure; Fig 3; 47pp; English.
 XX
 CC AAW19555-W19572 are omega conopeptides (OCs) derived from natural
 CC peptides from Conus sp. (cone snails). The peptides and their analogues
 CC are used as analgesics acting by blocking N-type voltage-sensitive
 CC calcium channels. The OCs can be used to treat neuropathic pain as a
 CC result of e.g. insult to the spinal cord or peripheral nerves, cancer,
 CC bone degenerative diseases, AIDS, reflex sympathetic dystrophy, herpes
 CC zoster neuropathy, diabetic neuropathy, hyperesthesia, allodynia or
 CC hyperalgesia. The OCs are preferably administered in a medicament via an
 CC epidural route in a continuous infusion or sustained release formulation.
 CC The OCs can provide pain relief when administered epidurally in the
 CC absence of a permeation enhancer, at doses that are comparable to
 CC effective analgesic doses using intrathecal administration. OC
 CC formulations comprising an OC and a carboxylic acid buffer anti-oxidant.
 CC They also confer stability to solutions containing them for prolonged
 CC treatment methods and long-term storage
 XX
 XX Sequence 27 AA;
 Query Match 98.6%; Score 145; DB 2; Length 27;
 Best Local Similarity 96.0%; Pred. No. 2.1e-09;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
 SQ
 OY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DB 3 CKGKGAKCSRLMYDCTGSCRSKGC 27
 RESULT 31
 AAW19560
 ID AAW19560 standard; peptide; 27 AA.
 XX
 XX AAW19560;
 AC
 XX 14-OCT-1997 (first entry)
 XX
 XX SNX-196, omega conopeptide derivative used for pain relief.
 DE
 XX Conopeptide; cone snail; pain; analgesic; neuropathy; epidural;

KW N-type voltage-sensitive calcium channel; block; Conus.
 XX Synthetic.
 XX Key Location/Qualifiers
 FH Disulfide-bond 2. .17
 FT Disulfide-bond 9. .21
 FT Disulfide-bond 16. .26
 XX
 PN WO9701351-A1.
 XX
 XX 16-JAN-1997.
 XX
 XX 26-JUN-1996; 96WO-US011041.
 XX
 XX 27-JUN-1995; 95US-00496847.
 PR 08-MAR-1996; 96US-00613400.
 XX
 XX (NEUR-) NEUREX CORP.
 XX
 XX Amstutz GA, Bowersox SS, Gohil K, Adriaenssens PI, Kristipati R;
 PI Gadbois T, Pettus MR, Luther RR;
 XX
 XX WPI; 1997-100012/09.
 XX
 XX Stable omega conopeptide compositions - for producing analgesia and for
 PT inhibiting progression of neuropathic pain disorders.
 PT
 XX Disclosure; Fig 3; 47pp; English.
 XX
 CC AAW19555-W19572 are omega conopeptides (OCs) derived from natural
 CC peptides from Conus sp. (cone snails). The peptides and their analogues
 CC are used as analgesics acting by blocking N-type voltage-sensitive
 CC calcium channels. The OCs can be used to treat neuropathic pain as a
 CC result of e.g. insult to the spinal cord or peripheral nerves, cancer,
 CC bone degenerative diseases, AIDS, reflex sympathetic dystrophy, herpes
 CC zoster neuropathy, diabetic neuropathy, hyperesthesia, allodynia or
 CC hyperalgesia. The OCs are preferably administered in a medicament via an
 CC epidural route in a continuous infusion or sustained release formulation.
 CC The OCs can provide pain relief when administered epidurally in the
 CC absence of a permeation enhancer, at doses that are comparable to
 CC effective analgesic doses using intrathecal administration. OC
 CC formulations comprising an OC and a carboxylic acid buffer anti-oxidant.
 CC They also confer stability to solutions containing them for prolonged
 CC treatment methods and long-term storage
 XX
 XX Sequence 27 AA;
 Query Match 98.6%; Score 145; DB 2; Length 27;
 Best Local Similarity 96.0%; Pred. No. 2.1e-09;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
 SQ
 OY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DB 2 CKGKGAKCSRLMYDCTGSCRSKGC 26
 RESULT 32
 AAY56488
 ID AAY56488 standard; peptide; 27 AA.
 XX
 XX AAY56488;
 AC
 XX 16-FEB-2000 (first entry)
 XX
 XX Analogue omega conopeptide SNX-196.
 DE
 XX
 KW Omega conopeptide; analgesic; nociceptive; neuropathic; pain; conotoxin;
 KW marine snail; peptide toxin; inflammation; binding;
 KW voltage-gated calcium channel; inhibition; norepinephrine; noradrenaline;
 KW anti-inflammatory.
 XX
 XX Conus sp.
 OS

XX	Key	Location/Qualifiers	
FT	Disulfide-bond	2. .17	
FT	Disulfide-bond	9. .21	
FT	Disulfide-bond	16. .26	
XX	US5994305-A.		
PN	XX		
XX	30-NOV-1999.		
XX	21-AUG-1998;	98US-00138439.	
XX	30-DEC-1991;	91US-00814759.	
PR	15-APR-1993;	93US-00049794.	
PR	03-JUL-1996;	96US-00675354.	
PR	01-NOV-1996;	96US-00742774.	
XX	(ELAN-) ELAN PHARM INC.		
XX	Justice A, Singh T, Valentino KL, Miljanich GP, Gohil KC;		
XX	WPI; 2000-038270/03.		
XX	Measuring the activity of test compounds in blocking voltage-gated		
PT	calcium channels, binding to the omega conopeptide binding site and		
PT	inhibiting norepinephrine (noradrenaline) release for treating		
PT	inflammation.		
XX	Disclosure; Fig 2; 47pp; English.		
XX	A method has been developed of selecting a test compound for treating		
CC	inflammation. The method comprises measuring the activity of the test		
CC	compound in blocking voltage-gated calcium channels, binding to the omega		
CC	conopeptide binding site and inhibiting norepinephrine (noradrenaline)		
CC	release from nervous tissue. The method is useful for selecting compounds		
CC	for treating inflammation. The selected compounds are capable of		
CC	producing analgesia in a mammalian subject with chronic or intractable		
CC	pain. Analgesia caused by selected compounds may reduce the reliance on		
CC	opioid analgesic agents of the prior art which cause dependency and		
CC	tolerance, requiring potentially dangerous increases in opioid doses to		
CC	achieve the analgesic effect. The present sequence represents an omega		
CC	conopeptide given in the present invention		
XX	Sequence 27 AA;		
SQ	Query Match	98.6%; Score 145; DB 3; Length 27;	
	Best Local Similarity	96.0%; Pred. No. 2.1e-09;	
	Matches 24; Conservative	0; Mismatches 1; Indels 0; Gaps 0;	
QY	1 CKGKGACXCSRLMYDCTGSCRSKGC 25		
Db	2 CKGKGACXCSRLMYDCTGSCRSKGC 26		
RESULT 33			
AAV56489			
ID	AAV56489 standard; peptide; 27 AA.		
XX			
AC	AAV56489;		
XX			
DT	16-FEB-2000 (first entry)		
XX			
DE	Analogue omega conopeptide SNX-197.		
XX			
KW	Omega conopeptide; analgesic; nociceptive; neuropathic; pain; conotoxin;		
KW	marine snail; peptide toxin; inflammation; binding;		
KW	voltage-gated calcium channel; inhibition; norepinephrine; noradrenaline;		
KW	anti-inflammatory.		
XX			
OS	Conus sp.		
XX			
FT	Key	Location/Qualifiers	
FT	Disulfide-bond	3. .18	

FT	Disulfide-bond	10. .22	
FT	Disulfide-bond	17. .27	
FT	Modified-site	27	
XX	/note= "amidated"		
PN	US5994305-A.		
XX	XX		
PD	30-NOV-1999.		
XX	21-AUG-1998;	98US-00138439.	
XX	30-DEC-1991;	91US-00814759.	
PR	15-APR-1993;	93US-00049794.	
PR	03-JUL-1996;	96US-00675354.	
PR	01-NOV-1996;	96US-00742774.	
XX	(ELAN-) ELAN PHARM INC.		
XX	Justice A, Singh T, Valentino KL, Miljanich GP, Gohil KC;		
XX	WPI; 2000-038270/03.		
XX	Measuring the activity of test compounds in blocking voltage-gated		
PT	calcium channels, binding to the omega conopeptide binding site and		
PT	inhibiting norepinephrine (noradrenaline) release for treating		
PT	inflammation.		
XX	Disclosure; Fig 2; 47pp; English.		
XX	A method has been developed of selecting a test compound for treating		
CC	inflammation. The method comprises measuring the activity of the test		
CC	compound in blocking voltage-gated calcium channels, binding to the omega		
CC	conopeptide binding site and inhibiting norepinephrine (noradrenaline)		
CC	release from nervous tissue. The method is useful for selecting compounds		
CC	for treating inflammation. The selected compounds are capable of		
CC	producing analgesia in a mammalian subject with chronic or intractable		
CC	pain. Analgesia caused by selected compounds may reduce the reliance on		
CC	opioid analgesic agents of the prior art which cause dependency and		
CC	tolerance, requiring potentially dangerous increases in opioid doses to		
CC	achieve the analgesic effect. The present sequence represents an omega		
CC	conopeptide given in the present invention		
XX	Sequence 27 AA;		
SQ	Query Match	98.6%; Score 145; DB 3; Length 27;	
	Best Local Similarity	96.0%; Pred. No. 2.1e-09;	
	Matches 24; Conservative	0; Mismatches 1; Indels 0; Gaps 0;	
QY	1 CKGKGACXCSRLMYDCTGSCRSKGC 25		
Db	3 CKGKGACXCSRLMYDCTGSCRSKGC 27		
RESULT 34			
AAV84655			
ID	AAV84655 standard; peptide; 29 AA.		
XX			
AC	AAV84655;		
XX			
DT	25-JUL-2000 (first entry)		
XX			
DE	Amino acid sequence of a cyclised conotoxin peptide.		
XX			
KW	Cyclised conotoxin; omega-conotoxin; neurological disorder; pain; stroke;		
KW	traumatic brain injury; migraine; epilepsy; Parkinson's disease;		
KW	Alzheimer's disease; multiple sclerosis; depression; alpha-conotoxin;		
KW	neuropsychiatric disorder; schizophrenia; Tourette's syndrome;		
KW	mu-conotoxin.		
XX			
OS	Synthetic.		
OS	Conus sp.		
XX			
FT	Key	Location/Qualifiers	

FT Misc-difference 1..29 /note= "peptide is cyclised via these residues"
FT Peptide 1..25 /note= "conotoxin"
FT Peptide 26..29 /note= "linker"
XX WO200015654-A1.
XX 23-MAR-2000.
XX 14-SEP-1999; 99WO-AU000769.
XX 14-SEP-1998; 98AU-00005895.
XX (UYQU) UNIV QUEENSLAND.
XX Craik DJ, Daly NL, Nielsen KJ;
XX WPI; 2000-271376/23.
XX Novel cyclized conotoxin peptides useful in the therapeutic treatment of
XX diseases in humans.
XX Claim 10; Page 31; 43pp; English.
XX AAY84654-58 represent cyclised conotoxin peptides of the invention. The
XX cyclised peptides have improved properties, compared to their linear
XX counterparts. These include resistance to cleavage by proteases, high
XX chemical stability, improved biophysical properties, reduced side effects
XX and improved bioavailability. Cyclised omega-conotoxin peptides block N-
XX type calcium channels, and so may be useful in the treatment of
XX neurological disorders such as acute and chronic pain, stroke, traumatic
XX brain injury, migraine, epilepsy, Parkinson's disease, Alzheimer's
XX disease, multiple sclerosis, and depression. Alpha-conotoxins may be
XX useful in the treatment of neuropsychiatric disorders such as
XX schizophrenia, Parkinson's disease, Alzheimer's disease and Tourette's
XX syndrome. Mu-conotoxins interact with neuronal channels and may be used
XX to treat chronic and neuropathic pain. The cyclised conotoxin peptides
XX can be also used as neuropharmacological probes. Antibodies raised
XX against the peptides are useful as therapeutic or diagnostic agents, and
XX can be used to screen for the peptides
SQ Sequence 29 AA;
Query Match 98.6%; Score 145; DB 3; Length 29;
Best Local Similarity 96.0%; Pred. No. 2-2e-09;
Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
Db 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
RESULT 35
AAY84656
ID AAY84656 standard; peptide; 32 AA.
AC AAY84656;
XX 25-JUL-2000 (first entry)
XX Amino acid sequence of a cyclised conotoxin peptide.
XX Cyclised conotoxin; omega-conotoxin; neurological disorder; pain; stroke;
XX traumatic brain injury; migraine; epilepsy; Parkinson's disease;
XX Alzheimer's disease; multiple sclerosis; depression; alpha-conotoxin;
XX neuropsychiatric disorder; schizophrenia; Tourette's syndrome;
XX mu-conotoxin.
XX Synthetic.
XX Conus sp.
XX

FH Key Location/Qualifiers
FT Misc-difference 1..32 /note= "peptide is cyclised via these residues"
FT Peptide 1..4 /note= "linker"
FT Peptide 5..29 /note= "conotoxin"
FT Peptide 30..32 /note= "linker"
XX WO200015654-A1.
XX 23-MAR-2000.
XX 14-SEP-1999; 99WO-AU000769.
XX 14-SEP-1998; 98AU-00005895.
XX (UYQU) UNIV QUEENSLAND.
XX Craik DJ, Daly NL, Nielsen KJ;
XX WPI; 2000-271376/23.
XX Novel cyclized conotoxin peptides useful in the therapeutic treatment of
XX diseases in humans.
XX Claim 10; Page 31; 43pp; English.
XX AAY84654-58 represent cyclised conotoxin peptides of the invention. The
XX cyclised peptides have improved properties, compared to their linear
XX counterparts. These include resistance to cleavage by proteases, high
XX chemical stability, improved biophysical properties, reduced side effects
XX and improved bioavailability. Cyclised omega-conotoxin peptides block N-
XX type calcium channels, and so may be useful in the treatment of
XX neurological disorders such as acute and chronic pain, stroke, traumatic
XX brain injury, migraine, epilepsy, Parkinson's disease, Alzheimer's
XX disease, multiple sclerosis, and depression. Alpha-conotoxins may be
XX useful in the treatment of neuropsychiatric disorders such as
XX schizophrenia, Parkinson's disease, Alzheimer's disease and Tourette's
XX syndrome. Mu-conotoxins interact with neuronal channels and may be used
XX to treat chronic and neuropathic pain. The cyclised conotoxin peptides
XX can be also used as neuropharmacological probes. Antibodies raised
XX against the peptides are useful as therapeutic or diagnostic agents, and
XX can be used to screen for the peptides
SQ Sequence 32 AA;
Query Match 98.6%; Score 145; DB 3; Length 32;
Best Local Similarity 96.0%; Pred. No. 2.4e-09;
Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
Db 5 CKGKGAKCSRLMYDCTGSCRSKGC 29
RESULT 36
AAY84654
ID AAY84654 standard; peptide; 32 AA.
AC AAY84654;
XX 25-JUL-2000 (first entry)
XX Amino acid sequence of a cyclised conotoxin peptide.
XX Cyclised conotoxin; omega-conotoxin; neurological disorder; pain; stroke;
XX traumatic brain injury; migraine; epilepsy; Parkinson's disease;
XX Alzheimer's disease; multiple sclerosis; depression; alpha-conotoxin;
XX neuropsychiatric disorder; schizophrenia; Tourette's syndrome;
XX mu-conotoxin.
XX

OS Synthetic.
 OS Conus sp.
 FH Key Location/Qualifiers
 FT Misc-difference 1. .32 /note= "peptide is cyclised via these residues"
 FT Peptide 1. .26 /note= "conotoxin"
 FT Peptide 26. .32 /note= "linker"
 XX
 PN WO200015654-A1.
 XX
 PD 23-MAR-2000.
 XX
 XX
 PF 14-SEP-1999; 99WO-AU000769.
 XX
 PR 14-SEP-1998; 98AU-00005895.
 XX
 PA (UYQU) UNIV QUEENSLAND.
 XX
 PI Craik DJ, Daly NL, Nielsen KJ;
 XX
 XX WPI; 2000-271376/23.
 DR
 XX Novel cyclized conotoxin peptides useful in the therapeutic treatment of
 PT diseases in humans.
 PT
 XX Claim 10; Page 31; 43pp; English.
 PS
 XX AAY84654-58 represent cyclised conotoxin peptides of the invention. The
 CC cyclised peptides have improved properties, compared to their linear
 CC counterparts. These include resistance to cleavage by proteases, high
 CC chemical stability, improved biophysical properties, reduced side effects
 CC and improved bioavailability. Cyclised omega-conotoxin peptides block N-
 CC type calcium channels, and so may be useful in the treatment of
 CC neurological disorders such as acute and chronic pain, stroke, traumatic
 CC brain injury, migraine, epilepsy, Parkinson's disease, Alzheimer's
 CC disease, multiple sclerosis, and depression. Alpha-conotoxins may be
 CC useful in the treatment of neuropsychiatric disorders such as
 CC schizophrenia, Parkinson's disease, Alzheimer's disease and Tourette's
 CC syndrome. Mu-conotoxins interact with neuronal channels and may be used
 CC to treat chronic and neuropathic pain. The cyclised conotoxin peptides
 CC can be also used as neuropharmacological probes. Antibodies raised
 CC against the peptides are useful as therapeutic or diagnostic agents, and
 CC can be used to screen for the peptides
 XX
 SQ Sequence 32 AA;
 Query Match 98.6%; Score 145; DB 3; Length 32;
 Best Local Similarity 96.0%; Pred. No. 2.4e-09;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
 QY 1 CKKGKAGCSRLMYDCTGSCRSKGC 25
 ||||| ||||| ||||| ||||| |||||
 Db 1 CKKGKAGCSRLMYDCTGSCRSKGC 25
 RESULT 37
 AAR12547
 ID AAR12547 standard; protein; 25 AA.
 XX
 AC AAR12547;
 XX
 DT 05-SEP-1991 (first entry)
 XX
 DE Omega conotoxin peptide analogue MVIIA(194).
 DE neuronal calcium-channel antagonist; OCT; adrenaline release;
 KW neuroprotective.
 KW Synthetic.
 XX
 OS
 PI
 XX

FH Key Location/Qualifiers
 FT Disulfide-bond 1. .16
 FT Disulfide-bond 8. .20
 FT Misc-difference 12 /label= Nle
 FT Disulfide-bond 15. .25
 FT Modified-site 25 /label= amidated carboxy terminal
 XX
 PN WO9107980-A.
 XX
 XX 13-JUN-1991.
 PD
 XX
 XX 22-NOV-1989; 89US-00440094.
 PF
 XX 22-NOV-1989; 89US-00440094.
 PR
 XX (NEUR-) NEUREX CORP.
 PA
 XX Miljanjich GP, Bitner RS, Bowersox SS, Fox JA, Valentino KL;
 PI Yamashiro DH;
 XX
 XX WPI; 1991-192969/26.
 DR
 XX Compens. for reducing ischaemia-related neuronal damage - contains
 PT neuronal channel antagonist omega conotoxin peptide which blocks
 PT norepinephrine release in central nervous system neuronal cells.
 PT
 XX Disclosure; Fig 2; 74pp; English.
 PS
 XX MVIIA(194) is an analogue of OCT peptide MVIIA in which a Nle residue
 CC replaces Met at position 12. The analogue gave IC(50) for inhibition of
 CC adrenaline release and Ki values within the ranges of those of OCT
 CC peptides MVIIA, GVIA, and/or TVIA. It is thus a candidate for a
 CC neuroprotective compound. See also AAR12542-6 and AAR13264-6
 XX
 SQ Sequence 25 AA;
 Query Match 96.6%; Score 142; DB 2; Length 25;
 Best Local Similarity 92.0%; Pred. No. 4.3e-09;
 Matches 23; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
 QY 1 CKKGKAGCSRLMYDCTGSCRSKGC 25
 ||||| ||||| ||||| ||||| |||||
 Db 1 CKKGKAGCSRLMYDCTGSCRSKGC 25
 RESULT 38
 AAB97043
 ID AAB97043 standard; peptide; 25 AA.
 XX
 AC AAB97043;
 XX
 DT 20-JUL-2001 (first entry)
 XX
 XX Omega-conch toxin MVIIA variant polypeptide #3.
 DE
 XX Omega-conch; toxin; MVIIA; variant; pain; nerve cell damage.
 KW
 XX Unidentified.
 OS
 XX CN1280136-A.
 PN
 XX 17-JAN-2001.
 PD
 XX 10-JUL-2000; 2000CN-00109828.
 PF
 XX 10-JUL-2000; 2000CN-00109828.
 PR
 XX (LIUJ/) LIU J.
 PA
 XX Liu P, Liu J;
 PI
 XX

```

DR WPI; 2001-282466/30.
XX
PT Gene sequence and amino-acid sequence of variant omega-conch toxin
PT polypeptide, their preparation and medicinal use.
XX
PS Claim 3; Page 1 (claims); 16pp; Chinese.
XX
CC The present sequence is provided in a specification relating to gene
CC sequences and amino acid sequences of Omega-conch toxin (MVIIA) variant
CC polypeptides. The polypeptides may be used for treating pain and nerve
CC cell damage. The methionine at position 12 of natural Omega-conch toxin
CC is changed into alanine, glycine, isoleucine or valine. The genes
CC encoding the Omega-conch toxin and its variant polypeptides are connected
CC serially into a polymer, and the Omega-conch toxin polymer is prepared
CC using a prokaryotic or eukaryotic expression system
XX
SQ Sequence 25 AA;

Query Match          96.6%; Score 142; DB 4; Length 25;
Best Local Similarity 92.0%; Pred. No. 4.3e-09;
Matches 23; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 CKKGKAGC SRLMYDCTGTCRSGKC 25
DB 1 CKKGKAGC SRLLYDCTGTCRSGKC 25

RESULT 39
AAB97044
ID AAB97044 standard; peptide; 25 AA.
XX
AC AAB97044;
XX
DT 20-JUL-2001 (first entry)
XX
DE Omega-conch toxin MVIIA variant polypeptide #4.
XX
KW Omega-conch; toxin; MVIIA; variant; pain; nerve cell damage.
XX
OS Unidentified.
XX
PN CN1280136-A.
XX
PD 17-JAN-2001.
XX
PF 10-JUL-2000; 2000CN-00109828.
XX
PR 10-JUL-2000; 2000CN-00109828.
XX
PA (LIUJ/) LIU J.
XX
PI Liu P, Liu J;
XX
DR WPI; 2001-282466/30.
XX
PT Gene sequence and amino-acid sequence of variant omega-conch toxin
XX polypeptide, their preparation and medicinal use.
XX
PS Claim 4; Page 1 (claims); 16pp; Chinese.
XX
CC The present sequence is provided in a specification relating to gene
CC sequences and amino acid sequences of Omega-conch toxin (MVIIA) variant
CC polypeptides. The polypeptides may be used for treating pain and nerve
CC cell damage. The methionine at position 12 of natural Omega-conch toxin
CC is changed into alanine, glycine, isoleucine or valine. The genes
CC encoding the Omega-conch toxin and its variant polypeptides are connected
CC serially into a polymer, and the Omega-conch toxin polymer is prepared
CC using a prokaryotic or eukaryotic expression system
XX
SQ Sequence 25 AA;

Query Match          95.9%; Score 141; DB 4; Length 25;
Best Local Similarity 92.0%; Pred. No. 5.6e-09;
Matches 23; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 CKKGKAGC SRLMYDCTGTCRSGKC 25
DB 1 CKKGKAGC SRLLYDCTGTCRSGKC 25

RESULT 40
AAB97045
ID AAB97045 standard; peptide; 25 AA.
XX
AC AAB97045;
XX
DT 20-JUL-2001 (first entry)
XX
DE Omega-conch toxin MVIIA variant polypeptide #5.
XX
KW Omega-conch; toxin; MVIIA; variant; pain; nerve cell damage.
XX
OS Unidentified.
XX
PN CN1280136-A.
XX
PD 17-JAN-2001.
XX
PF 10-JUL-2000; 2000CN-00109828.
XX
PR 10-JUL-2000; 2000CN-00109828.
XX
PA (LIUJ/) LIU J.
XX
PI Liu P, Liu J;
XX
DR WPI; 2001-282466/30.
XX
PT Gene sequence and amino-acid sequence of variant omega-conch toxin
XX polypeptide, their preparation and medicinal use.
XX
PS Claim 5; Page 2 (claims); 16pp; Chinese.
XX
CC The present sequence is provided in a specification relating to gene
CC sequences and amino acid sequences of Omega-conch toxin (MVIIA) variant
CC polypeptides. The polypeptides may be used for treating pain and nerve
CC cell damage. The methionine at position 12 of natural Omega-conch toxin
CC is changed into alanine, glycine, isoleucine or valine. The genes
CC encoding the Omega-conch toxin and its variant polypeptides are connected
CC serially into a polymer, and the Omega-conch toxin polymer is prepared
CC using a prokaryotic or eukaryotic expression system
XX
SQ Sequence 25 AA;

Query Match          95.9%; Score 141; DB 4; Length 25;
Best Local Similarity 92.0%; Pred. No. 5.6e-09;
Matches 23; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 CKKGKAGC SRLMYDCTGTCRSGKC 25
DB 1 CKKGKAGC SRLLYDCTGTCRSGKC 25

RESULT 41
AAW12983
ID AAW12983 standard; peptide; 25 AA.
XX
AC AAW12983;
XX
DT 25-MAR-2003 (revised)
DT 22-APR-1997 (first entry)
XX
DE Omega conopeptide SNX-200.
XX
KW Omega conopeptide; analgesic; treatment; neuropathic pain; inhibition;
KW neuronal damage; schizophrenia; tardive dyskinesia; analgesia;

```

KW acute dystonic reactions; inflammation; epilepsy.

OS Synthetic.

PN US5897454-A.

PD 24-DEC-1996.

PF 15-APR-1993; 93US-00049794.

PR 30-DEC-1991; 91US-00814759.

XX 30-DEC-1992; 92WO-US011349.

PA (NEUR-) NEUREX CORP.

PI Gohil KC, Miljanich GP, Valentino KL, Justice A, Singh T;

DR WPI; 1997-064830/06.

XX Omega cono:peptide(s) - useful as analgesics, esp. for treating neuropathic pain.

PS Disclosure; Col 51-52; 58pp; English.

XX The present peptide is an omega conopeptide, useful as an analgesic, especially for treating neuropathic pain. The peptide, which can be prepared by solid phase synthesis, can also be used to inhibit neuronal damage and treat schizophrenia, tardive dyskinesia, acute dystonic reactions, inflammation and epilepsy. (Updated on 25-MAR-2003 to correct PF field.)

XX Sequence 25 AA;

Query Match 95.2%; Score 140; DB 2; Length 25;
Best Local Similarity 92.0%; Pred. No. 7.2e-09;
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 CKKGAGXCSRLMYDCTGTCSCRSKGC 25

Db 1 CKGAGAACSRMLMYDCTGTCSCRSKGC 25

RESULT 42

AAW72623
ID AAW72623 standard; peptide; 25 AA.

AC AAW72623;

DT 27-AUG-2003 (revised)

DT 06-JAN-1999 (first entry)

XX Conus genus analogue omega-conopeptide SNX-200.

XX Conus genus; marine snail; cone snail; omega-conopeptide; analgesia;
KW nociceptive pain; neuropathic pain; neuronal tissue; conotoxin;
KW inflammation; schizophrenia; tardive dyskinesia; acute dystonic reaction;
KW rheumatoid arthritis; epilepsy.

XX Conus.

PN US5824645-A.

XX 20-OCT-1998.

PF 01-NOV-1996; 96US-00742774.

PR 30-DEC-1991; 91US-00814759.

PR 15-APR-1993; 93US-00049794.

PR 03-JUL-1996; 96US-00675354.

XX (NEUR-) NEUREX CORP.

PI Miljanich GP, Valentino KL, Gohil KC, Justice A, Singh T;

XX

DR WPI; 1998-582596/49.

XX

PT Treatment of inflammation, comprises administration of omega-conopeptide
PT - effective to block voltage-gated calcium channels; bind with high
PT affinity to omega-conopeptide binding site, and inhibit neuro-transmitter
PT release.

XX

PS Disclosure; Fig 2; 58pp; English.

XX

CC A method has been developed for the treatment of inflammation in a
CC subject. The method comprises administration of an omega-conopeptide
CC effective to: (i) block voltage-gated calcium channels; (ii) bind with
CC high affinity to an omega-conopeptide binding site; and (iii) inhibit
CC neurotransmitter release from nervous tissue. The method is used to treat
CC inflammation and associated pain. The treatment can also be used to
CC produce analgesia (especially in subjects experiencing neuropathic pain);
CC and to treat schizophrenia, tardive dyskinesia and acute dystonic
CC reactions, rheumatoid arthritis, and epilepsy. The present sequence
CC represents an analogue omega-conopeptide. Omega-conopeptides are
CC components of peptide toxins produced by marine snails of the genus
CC Conus, and which act as calcium channel blockers. (Updated on 27-AUG-2003
CC to correct OS field.)

XX

SQ Sequence 25 AA;

Query Match 95.2%; Score 140; DB 2; Length 25;

Best Local Similarity 92.0%; Pred. No. 7.2e-09;

Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 CKKGAGXCSRLMYDCTGTCSCRSKGC 25

Db 1 CKGAGAACSRMLMYDCTGTCSCRSKGC 25

RESULT 43

AAW95582

ID AAW95582 standard; protein; 25 AA.

XX AAW95582;

XX 29-MAR-1999 (first entry)

XX Analog omega-conopeptide SNX-200.

XX Omega-conopeptide; peptide toxin; snail; calcium channel blocker;
KW analgesia; guinea pig ileum; omega-conotoxin; pain; neuropathic.

XX Synthetic.

OS Conus sp.

XX Key Key Location/Qualifiers
FH Modified-site 25
FT /note= "C-terminal amide"

XX US58959186-A.

XX 12-JAN-1999.

XX 03-JUL-1996; 96US-00675354.

XX 30-DEC-1991; 91US-00814759.

XX 15-APR-1993; 93US-00049794.

XX (NEUR-) NEUREX CORP.

PI Miljanich GP, Gohil KC, Valentino KL, Justice A, Singh T;

DR WPI; 1999-120002/10.

XX Production of analgesia in mammal - by administration of omega cono-
PT peptide(s).

XX

PS Disclosure; Fig 2A-B; 59pp; English.

CC Sequences AAW95574-589 represent sequences of analog omega-conopeptides.

CC Omega-conopeptides are components of peptide toxins produced by marine

CC snails of the genus *Conus*, and which act as calcium channel blockers. The

CC invention relates to a method of producing analgesia in a mammal that

CC comprises administering an omega conopeptide having activities in (a)

CC inhibiting electrically stimulated contraction of guinea pig ileum and

CC (b) selectively binding to omega conopeptide MVIIA binding sites in

CC neuronal tissue, where these activities are within the ranges of those of

CC omega-conotoxins MVIIA and TVIIA. The method is used for treating chronic

CC pain, especially neuropathic pain

XX Sequence 25 AA;

SEQ

Query Match 95.2%; Score 140; DB 2; Length 25;

Best Local Similarity 92.0%; Pred. No. 7.2e-09;

Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 CKGKGACSRMLMYDCTGSCRSKGC 25
|||||

Db 1 CKGAGAACSRLMYDCTGSCRSKGC 25
|||||

RESULT 44

AAB14368

ID AAB14368 standard; peptide; 25 AA.

XX AC AAB14368;

XX DT 06-DEC-2000 (first entry)

XX DE Omega-conopeptide SNX-200.

XX KW Marine snail; omega-conopeptide; calcium channel blocker; SNX-200; toxin;

XX KW analgesic; antiinflammatory; anticonvulsant; neuroleptic;

XX KW norepinephrine release inhibitor; schizophrenia; tardive dyskinesia;

XX KW acute dystonic reaction; inflammation; epilepsy.

XX OS Conus sp.

XX OS Synthetic.

XX FH Key Location/Qualifiers

FT Disulfide-bond 1..16

FT Disulfide-bond 8..20

FT Disulfide-bond 15..25

FT Modified-site 25

FT /note= "C-terminal amide"

XX US6087091-A.

XX PN 11-JUL-2000.

XX PD 23-APR-1999; 99US-00298017.

XX PF 30-DEC-1991; 91US-00814759.

XX PR 15-APR-1993; 93US-00049794.

XX PR 03-JUL-1996; 96US-00675354.

XX PR 01-NOV-1996; 96US-00742774.

XX PR 21-AUG-1998; 98US-00138439.

XX PA (ELAN-) ELAN PHARM INC.

XX PI Singh T, Gohil KC, Valentino KL, Miljanich GP, Justice A;

XX DR WPI; 2000-490177/43.

XX PT Selecting a compound for producing analgesia involves measuring activity

XX of test compound in blocking voltage-gated calcium channels, binding to

XX omega conopeptide binding site and inhibiting norepinephrine release.

XX PS Disclosure; Fig 2; 58pp; English.

CC The present sequence is an omega-conopeptide analogue. Omega-conopeptides

CC are components of peptide toxins produced marine snails of the genus

CC *Conus*. Omega-conopeptides and their derivatives act as calcium channel

CC blockers and may be useful for producing analgesia in nociceptive and

CC neuropathic pain. The peptides bind to omega-conopeptide binding sites,

CC which are present mainly in neuronal tissue, and inhibit norepinephrine

CC release from nervous tissue. Conopeptides such as MVIIA and TVIIA are

CC effective as therapeutic agents for treating neurogenic conditions such

CC as schizophrenia, tardive dyskinesia and acute dystonic reactions,

CC inflammation and epilepsy

XX Sequence 25 AA;

SEQ

Query Match 95.2%; Score 140; DB 3; Length 25;

Best Local Similarity 92.0%; Pred. No. 7.2e-09;

Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 CKGKGACSRMLMYDCTGSCRSKGC 25
|||||

Db 1 CKGAGAACSRLMYDCTGSCRSKGC 25
|||||

RESULT 45

AAB19460

ID AAB19460 standard; peptide; 25 AA.

XX AC AAB19460;

XX DT 06-MAR-2001 (first entry)

XX DE Sequence of an omega-conopeptide analogue designated SNX-200.

XX KW Omega-conopeptide; voltage-gated calcium channel inhibitor; analgesic;

XX KW peptide toxin; opiate; pain; neuronal damage; ischemic condition;

XX KW schizophrenia; tardive dyskinesia; acute dystonic reaction; inflammation;

XX KW epilepsy.

XX OS Synthetic.

XX OS Conus sp.

XX FH Key Location/Qualifiers

FT Modified-site 25

FT /note= "amidated residue"

XX US6136786-A.

XX PN 24-OCT-2000.

XX PD 09-SEP-1999; 99US-00392979.

XX PF 30-DEC-1991; 91US-00814759.

XX PR 15-APR-1993; 93US-00049794.

XX PR 23-JUN-1993; 93US-00081863.

XX PR 03-JUL-1996; 96US-00675354.

XX PR 01-NOV-1996; 96US-00742774.

XX PR 21-AUG-1998; 98US-00138439.

XX PR 23-APR-1999; 99US-00298017.

XX PA (ELAN-) ELAN PHARM INC.

XX PI Singh T, Gohil KC, Valentino KL, Miljanich GP, Justice A;

XX DR WPI; 2001-030946/04.

XX PT Enhancing analgesia produced by opiates by administering an omega-

XX conopeptide that inhibits electrically stimulated contraction of guinea

XX pig ileum and binds to omega-conopeptide MVIIA binding sites in neuronal

XX tissues.

XX PS Disclosure; Col 51-52; 58pp; English.

XX CC The present sequence represents an omega-conopeptide analogue. Omega-

XX conopeptides are components of peptide toxins which act as voltage-gated

CC calcium channel inhibitors. The peptides are used to enhance the
 CC analgesic effect produced by an opiate in a mammalian subject. The method
 CC comprises administering to the subject an omega-conopeptide which is able
 CC to inhibit electrically stimulated contraction of the guinea pig ileum
 CC and bind to omega-conopeptide MWIIA binding sites present in neuronal
 CC tissue. Omega-conopeptides are useful for enhancing the analgesic effect
 CC produced by an opiate. Omega-conopeptides may also be used in the
 CC treatment of pain, in reducing neuronal damage related to an ischemic
 CC condition in mammals, and in treating schizophrenia, tardive dyskinesia
 CC and acute dystonic reactions, inflammation and epilepsy
 XX
 SQ Sequence 25 AA;

Query Match 95.2%; Score 140; DB 4; Length 25;
 Best Local Similarity 92.0%; Pred. No. 7.2e-09;
 Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 CKGKAGXCSRLMYDCTGSCRSKGC 25
 |||||
 Db 1 CKGAGAACSRMLMYDCTGSCRSKGC 25

RESULT 46

AAR12544
 ID AAR12544 standard; protein; 25 AA.

XX AAR12544;

XX 05-SEP-1991 (first entry)

XX Omega conotoxin peptide analogue MWIIA(190).

XX neuronal calcium-channel antagonist; OCT; adrenaline release;
 KW neuroprotective.

XX Synthetic.

XX Key Location/Qualifiers
 FH Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 FT Modified-site 25
 FT /label= amidated carboxy terminal

XX WO9107980-A.

XX 13-JUN-1991.

XX 22-NOV-1989; 89US-00440094.

XX 22-NOV-1989; 89US-00440094.

XX (NEUR-) NEUREX CORP.

XX Miljanjich GP, Bitner RS, Bowersox SS, Fox JA, Valentino KL;
 PI Yamashiro DH;

XX WPI; 1991-192969/26.

XX Compens. for reducing ischaemia-related neuronal damage - contains
 PT neuronal channel antagonist omega conotoxin peptide which blocks
 PT norepinephrine release in central nervous system neuronal cells.

XX Disclosure; Fig 2; 74pp; English.

XX MWIIA(190) is an analogue of OCT peptide MWIIA in which an Ala residue
 CC replaces Lys at position 4. The analogue gave IC(50) for inhibition of
 CC adrenaline release and Ki values within the ranges of those of OCT
 CC peptides MWIIA, GVIA, and/or TVIA. It is thus a candidate for a
 CC neuroprotective compound. See also AAR12542-3, AAR12545-7 and AAR13264-6
 XX
 SQ Sequence 25 AA;

Query Match 94.6%; Score 139; DB 2; Length 25;
 Best Local Similarity 92.0%; Pred. No. 9.3e-09;
 Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 CKGKAGXCSRLMYDCTGSCRSKGC 25
 |||||
 Db 1 CKGAGAACSRMLMYDCTGSCRSKGC 25

RESULT 47

AAR13264
 ID AAR13264 standard; protein; 25 AA.

XX AAR13264;

XX 05-SEP-1991 (first entry)

XX Omega conotoxin peptide analogue MWIIA(195).

XX neuronal calcium-channel antagonist; OCT; adrenaline release;
 KW neuroprotective.

XX Synthetic.

XX Key Location/Qualifiers
 FH Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 FT Modified-site 25
 FT /label= amidated carboxy terminal

XX WO9107980-A.

XX 13-JUN-1991.

XX 22-NOV-1989; 89US-00440094.

XX 22-NOV-1989; 89US-00440094.

XX (NEUR-) NEUREX CORP.

XX Miljanjich GP, Bitner RS, Bowersox SS, Fox JA, Valentino KL;
 PI Yamashiro DH;

XX WPI; 1991-192969/26.

XX Compens. for reducing ischaemia-related neuronal damage - contains
 PT neuronal channel antagonist omega conotoxin peptide which blocks
 PT norepinephrine release in central nervous system neuronal cells.

XX Disclosure; Fig 2; 74pp; English.

XX MWIIA(195) is an analogue of OCT peptide MWIIA in which an Ala residue
 CC replaces Lys at position 24. The analogue gave a Ki value within the
 CC ranges of those of OCT peptides MWIIA, GVIA, and/or TVIA. It gave an
 CC IC(50) for inhibition of adrenaline release outside the range for these
 CC neuroprotective compounds. See also AAR12542-7, and AAR13265-6
 XX
 SQ Sequence 25 AA;

Query Match 94.6%; Score 139; DB 2; Length 25;
 Best Local Similarity 92.0%; Pred. No. 9.3e-09;
 Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 CKGKAGXCSRLMYDCTGSCRSKGC 25
 |||||
 Db 1 CKGAGAACSRMLMYDCTGSCRSKGC 25

RESULT 48

AAR12545
 ID AAR12545 standard; protein; 25 AA.

XX

FT Modified-site 25 /note= "Amidated C-terminal"
XX
XX PN WO9313128-Al.
XX
XX PD 08-JUL-1993.
XX
XX PF 30-DEC-1992; 92WO-US011349.
XX
XX PR 30-DEC-1991; 91US-00814759.
XX
XX PA (NEUR-) NEUREX CORP.
XX
XX PI Justice A, Singh T, Gohil K, Valentino KL, Miljanich GP;
XX WPI; 1993-227270/28.
XX
XX PT Use of omega-cono-peptide(s) which selectively inhibit voltage-gated
XX calcium channels - to induce analgesia, enhance opiate analgesics, treat
XX pain etc.
XX
XX PS Claim 1; Fig 2; 90pp; English.
XX
XX CC The sequences given in AAR39608-30 are omega conopeptides (OCTs) and
XX derivatives of these, which may be used to produce analgesia in a mammal.
XX These OCTs inhibit voltage-gated calcium channels selectively in neuronal
XX tissue. This is shown by the peptides ability to stimulate contraction in
XX guinea pig ileum and to bind to OCT MW1A binding sites present in
XX neuronal tissue. OCTs are components of peptide toxins derived from
XX marine snails of the genus Conus, and act as calcium channel blockers.
XX These OCTs may be used to replace opioids in the treatment of chronic pain
XX or to reduce the opioid dosage required. This helps to reduce dependence
XX on and tolerance to opioid narcotics. (Updated on 25-MAR-2003 to correct
XX PN field.)
SQ Sequence 25 AA;

Query Match 94.6%; Score 139; DB 2; Length 25;
Best Local Similarity 92.0%; Pred. No. 9.3e-09;
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 CKGKGAXCSRLMYDCTGSCRSKGC 25
||| |||||
Db 1 CKGAGAKCSRLMYDCTGSCRSKGC 25
||| |||||

Search completed: March 28, 2005, 16:39:26
Job time : 66.6667 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: March 28, 2005, 16:30:33 ; Search time 66.6667 Seconds
(without alignments)
145.035 Million cell updates/sec

Title: US-09-787-082A-10
Perfect score: 151
Sequence: 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2105692 seqs, 386760381 residues

Total number of hits satisfying chosen parameters: 2105692

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 50 summaries

Database : A_Geneseq_16Dec04:*

- 1: Geneseqp1980s:*
- 2: Geneseqp1990s:*
- 3: Geneseqp2000s:*
- 4: Geneseqp2001s:*
- 5: Geneseqp2002s:*
- 6: Geneseqp2003s:*
- 7: Geneseqp2003Bs:*
- 8: Geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	151	100.0	25	2 AAR39608	Aar39608 MVIIA/SNX
2	151	100.0	25	2 AAR37752	Aar37752 MVIIA/SNX
3	151	100.0	25	2 AAR32777	Aar32777 MVIIA ome
4	151	100.0	25	2 AAR76089	Aar76089 Omega con
5	151	100.0	25	2 AAW19544	Aaw19544 Natural o
6	151	100.0	25	2 AAW19569	Aaw19569 SNX-279,
7	151	100.0	25	2 AAW12967	Aaw12967 Omega con
8	151	100.0	25	2 AAW72605	Aaw72605 Conus gen
9	151	100.0	25	2 AAW95564	Aaw95564 Omega-con
10	151	100.0	25	2 AAY42335	Aay42335 Omega-con
11	151	100.0	25	3 AAY56473	Aay56473 Natural o
12	151	100.0	25	3 AAY43714	Aay43714 Amino aci
13	151	100.0	25	3 AAB14352	Aab14352 Omega-con
14	151	100.0	25	4 AAB92219	Aab92219 Toxin pep
15	151	100.0	25	4 AAB19442	Aab19442 Primary s
16	151	100.0	25	4 AAB97046	Aab97046 Omega-con
17	151	100.0	25	5 AAO15124	Aao15124 Cone snai
18	151	100.0	26	2 AAR12546	Aar12546 Omega con
19	151	100.0	26	2 AAR37765	Aar37765 SNX-193.
20	151	100.0	26	2 AAW19557	Aaw19557 SNX-193.
21	151	100.0	26	3 AAY56485	Aay56485 Analogue
22	151	100.0	27	2 AAR13266	Aar13266 Omega con
23	151	100.0	27	2 AAR13265	Aar13265 Omega con
24	151	100.0	27	2 AAR37768	Aar37768 SNX-196.
25	151	100.0	27	2 AAR37769	Aar37769 SNX-197.

26	151	100.0	27	2 AAW19561	Aaw19561 SNX-197.
27	151	100.0	27	2 AAW19560	Aaw19560 SNX-196.
28	151	100.0	27	3 AAY56488	Aay56488 Analogue
29	151	100.0	27	3 AAY56489	Aay56489 Analogue
30	151	100.0	29	3 AAY84655	Aay84655 Amino aci
31	151	100.0	32	3 AAY84656	Aay84656 Amino aci
32	151	100.0	32	3 AAY84654	Aay84654 Amino aci
33	148	98.0	25	2 AAR12547	Aar12547 Omega con
34	148	98.0	25	4 AAB97043	Aab97043 Omega-con
35	147	97.4	25	4 AAB97044	Aab97044 Omega-con
36	147	97.4	25	4 AAB97045	Aab97045 Omega-con
37	145	96.0	25	2 AAR12544	Aar12544 Omega con
38	145	96.0	25	2 AAR13264	Aar13264 Omega con
39	145	96.0	25	2 AAR12545	Aar12545 Omega con
40	145	96.0	25	2 AAR39625	Aar39625 SNX-198.
41	145	96.0	25	2 AAR39618	Aar39618 SNX-190.
42	145	96.0	25	2 AAR39621	Aar39621 SNX-194.
43	145	96.0	25	2 AAR39622	Aar39622 SNX-195.
44	145	96.0	25	2 AAR39619	Aar39619 SNX-191.
45	145	96.0	25	2 AAR39626	Aar39626 SNX-200.
46	145	96.0	25	2 AAR37763	Aar37763 SNX-190.
47	145	96.0	25	2 AAR37771	Aar37771 SNX-200.
48	145	96.0	25	2 AAR37767	Aar37767 SNX-195.
49	145	96.0	25	2 AAR37766	Aar37766 SNX-194.
50	145	96.0	25	2 AAR37764	Aar37764 SNX-191.

ALIGNMENTS

RESULT 1
AAR39608
ID AAR39608 standard; peptide; 25 AA.

XX AAR39608;
XX
DT 25-MAR-2003 (revised)
DT 20-DEC-1993 (first entry)
XX

DE MVIIA/SNX111.
XX
KW Omega conopeptide; OCT; analgesia; inhibition; voltage-gated;
KW calcium channel; neurope; contraction; guinea pig; ileum; MVIIA;
KW binding site; toxin; marine; snail; Conus; opiod; chronic pain;
KW narcotics.
XX
OS Synthetic.

XX
FH Key Location/Qualifiers
FT Disulfide-bond 1..16
FT Disulfide-bond 8..20
FT Disulfide-bond 15..25
XX
PN WO9313128-A1.
XX
XX
PD 08-JUL-1993.
XX
PF 30-DEC-1992; 92WO-US011349.
XX
PR 30-DEC-1991; 91US-00814759.
XX
XX (NEUR-) NEUREX CORP.
XX
PI Justice A, Singh T, Gohil K, Valentino KL, Miljanich GP;
XX
XX WPI; 1993-227270/28.
XX
XX
PT Use of omega-cono-peptide(s) which selectively inhibit voltage-gated
PT calcium channels - to induce analgesia, enhance opiate analgesics, treat
PT pain etc.
XX
XX Claim 1; Fig 1; 90pp; English.
PS
XX

CC The sequences given in AAR39608-30 are omega conopeptides (OCTs) and
 CC derivatives of these, which may be used to produce analgesia in a mammal.
 CC These OCTs inhibit voltage-gated calcium channels selectively in neuronal
 CC tissue. This is shown by the peptides ability to stimulate contraction in
 CC guinea pig ileum and to bind to OCT MVIIA binding sites present in
 CC neuronal tissue. OCTs are components of peptide toxins derived from
 CC marine snails of the genus Conus, and act as calcium channel blockers.
 CC These OCTs may be used to replace opioids in the treatment of chronic pain
 CC or to reduce the opioid dosage required. This helps to reduce dependence
 CC on and tolerance to opioid narcotics. (Updated on 25-MAR-2003 to correct
 CC PN field.)
 CC
 XX
 SQ Sequence 25 AA;

Query Match 100.0%; Score 151; DB 2; Length 25;
 Best Local Similarity 100.0%; Pred. No. 3.7e-10; Indels 0; Gaps 0;
 Matches 25; Conservative 0; Mismatches 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 |||||
 Db 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 2
 AAR37752
 ID AAR37752 standard; peptide; 25 AA.

AC AAR37752;

DT 25-MAR-2003 (revised)

DT 08-SEP-1993 (first entry)

XX MVIIA/SNX-111.

DE Ischaemia; neuronal; omega-conotoxin; OCT; MVIIA; MVIIIC; MVIID; MVIIIB;
 KW GVIA; GVIIA; RVIA; SVIA; TVIA; SVIB; SNX-207; stroke; delayed treatment;
 KW antihistamine; blood pressure; N-type voltage-gated Ca currents;
 KW N-channel mediated neurotransmitter release.

XX Synthetic.

XX Key Location/Qualifiers

FH Disulfide-bond 1..16

FT Disulfide-bond 8..20

FT Disulfide-bond 15..25

XX WO9310145-A1.

XX 27-MAY-1993.

XX 12-NOV-1992; 92WO-US009766.

XX 12-NOV-1991; 91US-00789913.

PR 17-JUL-1992; 92US-00916478.

XX (NEUR-) NEUREX CORP.

XX Miljanich GP, Bowersox SS, Fox JA, Valentino KL, Bitner RS;

PI Yamashiro DH;

XX WPI; 1993-182487/22.

XX Redn. of neuronal damage caused by ischaemia - by admin. of cpds. that
 PT bind specifically to omega-conotoxin MVIIA binding sites.

XX Disclosure; Fig 1; 103pp; English.

XX Ischaemia-related neuronal damage in mammals is reduced by admin., 4-24
 CC hr after onset of ischaemia, of a cpd. (I) which binds selectively to an
 CC omega-conotoxin (OCT) MVIIA site in neuronal tissue. (I) has selectivity
 CC at least 100 expressed as ratio of binding affinity for the MVIIA site to
 CC that for the MVIIIC site. (I) is one of the OCTs MVIIA, MVIIIB, GVIA, GVIIA
 CC or RVIA or it is the cpd. SNX-207. (I) is esp. used to reduce neuronal

CC damage caused by stroke. By delaying admin. for some time (compare
 CC US051403 where cpds. are given within 1 hr of the onset of ischaemia) a
 CC greater redn. in neuronal damage is achieved. (I) is admin. e.g. by
 CC intracerebroventricular (ICV) injection at 0.1-20 microg/kg, but can also
 CC be given i.v. (Opt. after treatment with antihistamines to minimise redn.
 CC in blood pressure caused by (I)). (I) is also at least as effective as
 CC the specified conotoxins for (1) selective inhibition of N-type voltage-
 CC gated Ca currents in neuronal tissue and (2) selective inhibition of N-
 CC channel mediated neurotransmitter release in neuronal tissue. Primary
 CC sequences of omega-conopeptides are given in AAR37752-62. Several analog
 CC omega-conopeptides are given in AAR37763-76. (Updated on 25-MAR-2003 to
 CC correct PN field.)
 CC
 XX

SQ Sequence 25 AA;

Query Match 100.0%; Score 151; DB 2; Length 25;
 Best Local Similarity 100.0%; Pred. No. 3.7e-10; Indels 0; Gaps 0;
 Matches 25; Conservative 0; Mismatches 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 |||||
 Db 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 3

AAR32777

ID AAR32777 standard; peptide; 25 AA.

AC AAR32777;

DT 28-JUN-1993 (first entry)

XX MVIIA omega conotoxin peptide.

DE OCT; neuronal damage reduction; ischemia; secondary damage; stroke.

XX Synthetic.

XX US5189020-A.

XX 23-FEB-1993.

XX 02-AUG-1990; 90US-00561766.

XX 22-NOV-1989; 89US-00440094.

XX (NEUR-) NEUREX CORP.

XX Miljanich GP, Bitner RS, Bowersox SS, Fox JA, Valentino KL;

PI Yamashiro DH, Tsubokawa M;

XX WPI; 1993-085564/10.

XX Reducing neuronal damage due to ischaemia - involves using omega
 PT conotoxin peptide or fragment.

XX Disclosure; Fig 1; 32pp; English.

XX The sequence is that of the MVIIA omega conotoxin (OCT) peptide which can
 CC bind to an OCT binding protein, inhibit voltage-gated calcium currents
 CC selectively in neuronal tissue and inhibit neuronal transmitter release
 CC selectively in neuronal tissue. These properties all occur within the
 CC range of those of MVIIIB, GVIIA, RVIA, or pref. MVIIA and GVIA OCTs. The
 CC peptide can be used in reducing or preventing both anatomical and
 CC functional secondary damage related to ischemia, generally as associated
 CC with stroke

SQ Sequence 25 AA;

Query Match 100.0%; Score 151; DB 2; Length 25;
 Best Local Similarity 100.0%; Pred. No. 3.7e-10; Indels 0; Gaps 0;
 Matches 25; Conservative 0; Mismatches 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 Db 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 4
 AAR76089
 ID AAR76089 standard; peptide; 25 AA.
 XX AAR76089;
 XX 27-AUG-2003 (revised)
 DT 25-MAR-2003 (revised)
 DT 02-FEB-1996 (first entry)
 XX Omega conotoxin MVIIA peptide.
 XX Omega conotoxin; marine snail; Conus; voltage-gated Ca channel blocker;
 KW synaptosome; membrane; fish electric organ; mammalian brain; ischaemia;
 KW binding protein; binding affinity; stroke.
 XX Conus.
 XX Key Location/Qualifiers
 FH Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 FT Modified-site 25 /note= "amidated C-terminus"
 XX US5424218-A.
 XX 13-JUN-1995.
 XX 04-NOV-1993; 93US-00147714.
 XX 22-NOV-1989; 89US-00440094.
 PR 02-AUG-1990; 90US-00561766.
 PR 23-MAR-1992; 92US-00855269.
 XX (NEUR-) NEUREX CORP.
 XX Valentino KL, Bowersox SS, Bitner RS, Miljanich GP, Yamashiro DH,
 PI Fox JA;
 XX WPI; 1995-223694/29.
 XX Identifying cpds. able to reduce neuronal damage caused by ischaemia - by
 PT measuring their affinity to omega conotoxin MVIIA binding site and
 PT ability e.g. to inhibit voltage gated calcium channels.
 XX Disclosure; Fig 1; 31pp; English.
 XX The peptides AAR76089-95 are naturally occurring omega conotoxin (OCT)
 CC peptides derived from marine snails of the Conus genus. The peptide
 CC sequences were used to chemically synthesise the OCT peptide fragments
 CC AAR76096-R76109. The OCT peptides act as voltage-gated Ca channel
 CC blockers by binding to a 210 kD protein from synaptosomal membrane
 CC preparations from fish electric organ or mammalian brains. The peptides
 CC and their synthesised fragments can be used to screen for compounds that
 CC bind to the OCT binding protein, by displacing a high affinity labelled
 CC OCT, such as MVIIA, from a synaptosomal membrane preparation. The
 CC compounds should have binding affinities and activities at least equal to
 CC those of the natural peptides (Ki 0.44-324 nM). The screened compounds
 CC are potentially useful in treating ischaemic conditions, esp. stroke, and
 CC can reduce sec. anatomical and functional damage associated with those
 CC conditions. (Updated on 25-MAR-2003 to correct Pf field.) (Updated on 27-
 CC AUG-2003 to correct OS field.)
 XX Sequence 25 AA;
 SQ

Query Match 100.0%; Score 151; DB 2; Length 25;
 Best Local Similarity 100.0%; Pred. No. 3.7e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 Db 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 5
 AAW19544
 ID AAW19544 standard; peptide; 25 AA.
 XX AAW19544;
 XX 27-AUG-2003 (revised)
 DT 13-OCT-1997 (first entry)
 XX Natural omega-conopeptide MVIIA/SNX-111 used for pain relief.
 XX Conopeptide; cone snail; pain; analgesic; neuropathy; epidural;
 KW N-type voltage-sensitive calcium channel; block; Conus.
 XX Conus.
 XX Key Location/Qualifiers
 FH Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 FT Modified-site 25 /note= "optionally amidated"
 XX WO9701351-A1.
 XX 16-JAN-1997.
 XX 26-JUN-1996; 96WO-US011041.
 XX 27-JUN-1995; 95US-00496847.
 PR 08-MAR-1996; 96US-00613400.
 XX (NEUR-) NEUREX CORP.
 XX Amstutz GA, Bowersox SS, Gohil K, Adriaenssens PI, Kristipati R;
 PI Gadbois T, Pettus MR, Luther RR;
 XX WPI; 1997-100012/09.
 XX Stable omega conopeptide compositions - for producing analgesia and for
 PT inhibiting progression of neuropathic pain disorders.
 XX Claim 3; Fig 1, Fig 3; 47pp; English.
 XX AAW19544-W19553 are naturally occurring omega conopeptides (OCs) isolated
 CC from Conus sp. (cone snails). The peptides and their analogues are used
 CC as analgesics acting by blocking N-type voltage-sensitive calcium
 CC channels. The OCs can be used to treat neuropathic pain as a result of
 CC e.g. insult to the spinal cord or peripheral nerves, cancer, bone
 CC degenerative diseases, AIDS, reflex sympathetic dystrophy, herpes zoster
 CC neuropathy, diabetic neuropathy, hyperesthesia, allodynia or
 CC hyperalgesia. The OCs are preferably administered in a medicament via an
 CC epidural route in a continuous infusion or sustained release formulation.
 CC The OCs can provide pain relief when administered epidurally in the
 CC absence of a permeation enhancer, at doses that are comparable to
 CC effective analgesic doses using intrathecal administration. OC
 CC formulations comprising an OC and a carboxylic acid buffer anti-oxidant.
 CC They also confer stability to solutions containing them for prolonged
 CC treatment methods and long-term storage. (Updated on 27-AUG-2003 to
 CC correct OS field.)
 XX Sequence 25 AA;
 SQ

Query Match 100.0%; Score 151; DB 2; Length 25;
 Best Local Similarity 100.0%; Pred. No. 3.7e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKKGAKCSRLMYDCTGSCRSKGC 25
 Db 1 CKKGAKCSRLMYDCTGSCRSKGC 25

RESULT 6

AAW19569
 ID AAW19569 standard; peptide; 25 AA.

XX AAW19569;

XX 14-OCT-1997 (first entry)

XX SNX-279, omega conopeptide derivative used for pain relief.

XX Conopeptide; cone snail; pain; analgesic; neuropathy; epidural;
 KW N-type voltage-sensitive calcium channel; block; Conus.

XX Synthetic.

XX Key Location/Qualifiers

FT Disulfide-bond 1. .16

FT Disulfide-bond 8. .20

FT Misc-difference 12

FT /label= Met(O)

FT /note= "sulphoxymethionine"

FT Disulfide-bond 15. .25

FT Modified-site 25

FT /note= "amidated"

XX WO9701351-A1.

XX 16-JAN-1997.

XX 26-JUN-1996; 96WO-US011041.

XX 27-JUN-1995; 95US-00496847.

XX 08-MAR-1996; 96US-00613400.

XX (NEUR-) NEUREX CORP.

XX Amstutz GA, Bowersox SS, Gohil K, Adriaenssens PI, Kristipati R;

PI Gadbois T, Pettus MR, Luther RR;

XX WPI; 1997-100012/09.

XX Stable omega conopeptide compositions - for producing analgesia and for
 PT inhibiting progression of neuropathic pain disorders.

XX Claim 3; Fig 3; 47pp; English.

XX AAW19555-W19572 are omega conopeptides (OCs) derived from natural
 CC peptides from Conus sp. (cone snails). The peptides and their analogues
 CC are used as analgesics acting by blocking N-type voltage-sensitive
 CC calcium channels. The OCs can be used to treat neuropathic pain as a
 CC result of e.g. insult to the spinal cord or peripheral nerves, cancer,
 CC bone degenerative diseases, AIDS, reflex sympathetic dystrophy, herpes
 CC zoster neuropathy, diabetic neuropathy, hyperesthesia, allodynia or
 CC hyperalgesia. The OCs are preferably administered in a medicament via an
 CC epidural route in a continuous infusion or sustained release formulation.
 CC The OCs can provide pain relief when administered epidurally in the
 CC absence of a permeation enhancer, at doses that are comparable to
 CC effective analgesic doses using intrathecal administration. OC
 CC formulations comprising an OC and a carboxylic acid buffer anti-oxidant.
 CC They also confer stability to solutions containing them for prolonged
 CC treatment methods and long-term storage

XX Sequence 25 AA;

Query Match 100.0%; Score 151; DB 2; Length 25;
 Best Local Similarity 100.0%; Pred. No. 3.7e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKKGAKCSRLMYDCTGSCRSKGC 25
 Db 1 CKKGAKCSRLMYDCTGSCRSKGC 25

RESULT 7

AAW12967
 ID AAW12967 standard; peptide; 25 AA.

XX AAW12967;

XX 25-MAR-2003 (revised)

XX 22-APR-1997 (first entry)

XX Omega conopeptide SNX-111.

XX Omega conopeptide; analgesic; treatment; neuropathic pain; inhibition;
 KW neuronal damage; schizophrenia; tardive dyskinesia; analgesia;
 KW acute dystonic reactions; inflammation; epilepsy.

XX Synthetic.

XX US5587454-A.

XX 24-DEC-1996.

XX 15-APR-1993; 93US-00049794.

XX 30-DEC-1991; 91US-00814759.

XX 30-DEC-1992; 92WO-US011349.

XX (NEUR-) NEUREX CORP.

XX Gohil KC, Miljanich GP, Valentino KL, Justice A, Singh T;

XX WPI; 1997-064830/06.

XX Omega conopeptide(s) - useful as analgesics, esp. for treating
 PT neuropathic pain.

XX Example 1; Col 39-40; 58pp; English.

XX The present peptide is an omega conopeptide, useful as an analgesic,
 CC especially for treating neuropathic pain. The peptide, which can be
 CC prepared by solid phase synthesis, can also be used to inhibit neuronal
 CC damage and treat schizophrenia, tardive dyskinesia, acute dystonic
 CC reactions, inflammation and epilepsy. In a rat paw formalin test, the
 CC peptide had an ED50 of 0.011 microg in phase 1, and 0.011 microg in phase
 CC 2 (by intrathecal administration). (Updated on 25-MAR-2003 to correct PF
 CC field.)

XX Sequence 25 AA;

Query Match 100.0%; Score 151; DB 2; Length 25;
 Best Local Similarity 100.0%; Pred. No. 3.7e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKKGAKCSRLMYDCTGSCRSKGC 25

Db 1 CKKGAKCSRLMYDCTGSCRSKGC 25

RESULT 8

AAW72605
 ID AAW72605 standard; peptide; 25 AA.

XX AAW72605;

XX 27-AUG-2003 (revised)

XX 06-JAN-1999 (first entry)

XX Conus genus natural omega-conopeptide MVIIA/SNX-111.

XX Conus genus; marine snail; cone snail; omega-conopeptide; analgesia;
 KW nociceptive pain; neuropathic pain; neuronal tissue; conotoxin;
 KW inflammation; schizophrenia; tardive dyskinesia; acute dystonic reaction;
 KW rheumatoid arthritis; epilepsy.
 XX
 OS Conus.
 XX
 XX US5824645-A.
 PN
 XX 20-OCT-1998.
 PD
 XX
 XX 01-NOV-1996; 96US-00742774.
 PF
 XX 30-DEC-1991; 91US-00814759.
 PR
 XX 15-APR-1993; 93US-00049794.
 PR
 XX 03-JUL-1996; 96US-00675354.
 PR
 XX (NEUR-) NEUREX CORP.
 PA
 XX Miljanich GP, Valentino KL, Gohil KC, Justice A, Singh T;
 PI WPI; 1998-582596/49.
 XX
 XX Treatment of inflammation, comprises administration of omega-conopeptide
 PT - effective to block voltage-gated calcium channels, bind with high
 PT affinity to omega-conopeptide binding site, and inhibit neurotransmitter
 PT release.
 XX
 XX Disclosure; Fig 1; 58pp; English.
 PS
 XX A method has been developed for the treatment of inflammation in a
 CC subject. The method comprises administration of an omega-conopeptide
 CC effective to: (i) block voltage-gated calcium channels; (ii) bind with
 CC high affinity to an omega-conopeptide binding site; and (iii) inhibit
 CC neurotransmitter release from nervous tissue. The method is used to treat
 CC inflammation and associated pain. The treatment can also be used to
 CC produce analgesia (especially in subjects experiencing neuropathic pain);
 CC and to treat schizophrenia, tardive dyskinesia and acute dystonic
 CC reactions, rheumatoid arthritis, and epilepsy. The present sequence
 CC represents a natural omega-conopeptide. Omega-conopeptides are components
 CC of peptide toxins produced by marine snails of the genus Conus, and which
 CC act as calcium channel blockers. (Updated on 27-AUG-2003 to correct OS
 CC field.)
 CC
 XX Sequence 25 AA;
 SQ

Query Match 100.0%; Score 151; DB 2; Length 25;
 Best Local Similarity 100.0%; Pred. No. 3.7e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 |||||
 DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 |||||

RESULT 9
 AAW95564
 ID AAW95564 standard; protein; 25 AA.
 XX
 XX AAW95564;
 AC
 XX 29-MAR-1999 (first entry)
 DT
 XX Omega-conopeptide MWIIA/SNX-111.
 DE
 XX Omega-conopeptide; peptide toxin; snail; calcium channel blocker;
 KW analgesia; guinea pig ileum; omega-conotoxin; pain; neuropathic.
 KW
 XX Synthetic.
 OS
 XX Conus sp.
 OS
 XX Key Location/Qualifiers

Query Match 100.0%; Score 151; DB 2; Length 25;
 Best Local Similarity 100.0%; Pred. No. 3.7e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 |||||
 DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 |||||

RESULT 10
 AAY42335
 ID AAY42335 standard; peptide; 25 AA.
 XX
 XX AAY42335;
 AC
 XX 20-DEC-1999 (first entry)
 DT
 XX Omega-conotoxin OCT MWIIA.
 DE
 XX Calcium channel; neuron; retina; optic nerve; trauma; ischaemia; vision;
 KW prevention.
 KW
 XX Conus sp.
 OS
 XX Key Location/Qualifiers
 FH Disulfide-bond 1. .16
 FT Disulfide-bond 8. .20
 FT Disulfide-bond 15. .25
 FT Misc-difference 25
 FT /note= "Optionally contains C-terminal amide"
 FT
 XX US5965534-A.
 PN
 XX 12-OCT-1999.
 PD
 XX

FT Modified-site 25 /note= "C-terminal amide"
 FT
 XX US5859186-A.
 PN
 XX 12-JAN-1999.
 PD
 XX 03-JUL-1996; 96US-00675354.
 PF
 XX 30-DEC-1991; 91US-00814759.
 PR
 XX 15-APR-1993; 93US-00049794.
 PR
 XX (NEUR-) NEUREX CORP.
 PA
 XX Miljanich GP, Gohil KC, Valentino KL, Justice A, Singh T;
 PI WPI; 1999-120002/10.
 DR
 XX Production of analgesia in mammal - by administration of omega cono-
 PT peptide(s).
 PT
 XX Claim 3; Fig 1; 59pp; English.
 PS
 XX Sequences AAW95564-573 represent primary sequences of natural omega-
 CC conopeptides. Omega-conopeptides are components of peptide toxins
 CC produced by marine snails of the genus Conus, and which act as calcium
 CC channel blockers. The invention relates to a method of producing
 CC analgesia in a mammal that comprises administering an omega conopeptide
 CC having activities in (a) inhibiting electrically stimulated contraction
 CC of guinea pig ileum and (b) selectively binding to omega conopeptide
 CC MWIIA binding sites in neuronal tissue, where these activities are within
 CC the ranges of those of omega-conotoxins MWIIA and TVIIA. The method is
 CC used for treating chronic pain, especially neuropathic pain. The present
 CC sequence is a specifically claimed example of an omega-conopeptide that
 CC can be used in the method of the invention
 CC
 XX Sequence 25 AA;
 SQ

Query Match 100.0%; Score 151; DB 2; Length 25;
 Best Local Similarity 100.0%; Pred. No. 3.7e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 |||||
 DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 |||||

RESULT 10
 AAY42335
 ID AAY42335 standard; peptide; 25 AA.
 XX
 XX AAY42335;
 AC
 XX 20-DEC-1999 (first entry)
 DT
 XX Omega-conotoxin OCT MWIIA.
 DE
 XX Calcium channel; neuron; retina; optic nerve; trauma; ischaemia; vision;
 KW prevention.
 KW
 XX Conus sp.
 OS
 XX Key Location/Qualifiers
 FH Disulfide-bond 1. .16
 FT Disulfide-bond 8. .20
 FT Disulfide-bond 15. .25
 FT Misc-difference 25
 FT /note= "Optionally contains C-terminal amide"
 FT
 XX US5965534-A.
 PN
 XX 12-OCT-1999.
 PD
 XX

```

PF 13-MAR-1998; 98US-00039168.
XX
PR 22-NOV-1995; 95US-00562142.
XX
XX (ALCO-) ALCON LAB INC.
XX
XX Hellberg M, Pang I, Kapin M;
XX
XX WPI; 1999-579926/49.
XX
XX
XX Treatment or prevention of retinal or optic nerve head damage comprises
XX administration of an omega-conotoxin derivative.
XX
XX Claim 2; Col 3-4; 7pp; English.
XX
XX This sequence represents omega-conotoxin OCT MVIIA. Omega-conotoxins
XX selectively block N-type calcium channels responsible for calcium influx
XX in neurons. Acute retinal or optic nerve damage, which can result in the
XX loss of vision, is caused by acute trauma and pathological events such as
XX ischaemia, hypoxia or oedema. The release of excitatory amino acids is
XX implicated in ischaemia-related neuronal and retinal damage, with
XX excitatory amino acid release leading to excessive stimulation of post-
XX synaptic excitatory amino acid receptors, which can result in cell
XX injury. The release of such excitatory amino acids from presynaptic nerve
XX terminals is dependent upon an elevation of calcium in the nerve
XX terminal. This presynaptic calcium influx is mediated by the N-type
XX calcium channels that are inhibited by omega-conotoxins. Intraocular
XX administration of at least one omega-conotoxin could be used for the
XX treatment or prevention of retinal or optic nerve head damage resulting
XX from acute traumatic or acute ischaemic events
XX
XX Sequence 25 AA;
XX
XX Query Match 100.0%; Score 151; DB 2; Length 25;
XX Best Local Similarity 100.0%; Pred. No. 3.7e-10;
XX Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
DB |||||
1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 11
AA56473
ID AAY56473 standard; peptide; 25 AA.
XX
AC AAY56473;
XX
DT 16-FEB-2000 (first entry)
XX
DE Natural omega conopeptide MVIIA/SNX-111.
XX
XX Omega conopeptide; analgesic; nociceptive; neuropathic; pain; conotoxin;
XX marine snail; peptide toxin; inflammation; binding;
XX voltage-gated calcium channel; inhibition; norepinephrine; noradrenaline;
XX anti-inflammatory.
XX
OS Conus sp.
XX
PN US5994305-A.
XX
XX 30-NOV-1999.
XX
XX 21-AUG-1998; 98US-00138439.
XX
XX 30-DEC-1991; 91US-00814759.
XX
PR 15-APR-1993; 93US-00049794.
XX
PR 03-JUL-1996; 96US-00675354.
XX
PR 01-NOV-1996; 96US-00742774.
XX
XX (ELAN-) ELAN PHARM INC.
XX
XX Justice A, Singh T, Valentino KL, Miljanich GP, Gohil KC;
XX
PI

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XX
DR WPI; 2000-038270/03.
XX
PT Measuring the activity of test compounds in blocking voltage-gated
PT calcium channels, binding to the omega conopeptide binding site and
PT inhibiting norepinephrine (noradrenaline) release for treating
PT inflammation.
XX
XX Disclosure; Fig 1; 47pp; English.
XX
XX A method has been developed of selecting a test compound for treating
XX inflammation. The method comprises measuring the activity of the test
XX compound in blocking voltage-gated calcium channels, binding to the omega
XX conopeptide binding site and inhibiting norepinephrine (noradrenaline)
XX release from nervous tissue. The method is useful for selecting compounds
XX for treating inflammation. The selected compounds are capable of
XX producing analgesia in a mammalian subject with chronic or intractable
XX pain. Analgesia caused by selected compounds may reduce the reliance on
XX opioid analgesic agents of the prior art which cause dependency and
XX tolerance, requiring potentially dangerous increases in opioid doses to
XX achieve the analgesic effect. The present sequence represents an omega
XX conopeptide given in the present invention
XX
SQ Sequence 25 AA;
XX
XX Query Match 100.0%; Score 151; DB 3; Length 25;
XX Best Local Similarity 100.0%; Pred. No. 3.7e-10;
XX Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
DB |||||
1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 12
AA43714
ID AAY43714 standard; peptide; 25 AA.
XX
AC AAY43714;
XX
DT 11-FEB-2000 (first entry)
XX
DE Amino acid sequence of an omega-conotoxin MVIIA(SNX-III).
XX
XX Omega-conotoxin; venom; predatory marine snail; N-type calcium channel;
XX neuronal damage reduction; ischemia; analgesia; opiate analgesia;
XX schizophrenia; stimulant induced psychosis; hypertension; inflammation;
XX bronchotension; neuropathic pain; voltage sensitive calcium channel.
XX
OS Conus magus.
XX
XX WO9954350-A1.
XX
XX 28-OCT-1999.
XX
XX 16-APR-1999; 99WO-AU000288.
XX
XX 16-APR-1998; 98AU-00002989.
XX
PR 01-FEB-1999; 99AU-00008419.
XX
XX (UYQU ) UNIV QUEENSLAND.
XX
XX Drinkwater RD, Lewis RJ, Alewood PF, Nielsen KJ;
XX
XX WPI; 2000-013226/01.
XX
XX Novel peptides used for the treatment of disorders and diseases where
XX blockage of the N-type calcium channels is required.
XX
XX Disclosure; Page 12; 81pp; English.
XX
XX The present sequence represents an omega-conotoxin. Omega-conotoxins are
XX isolated from venoms of predatory marine snails, and have a selectivity
CC

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CC for N-type calcium channels over P/Q type channels, and so block N-type
 CC calcium channels. The omega-conotoxins of the invention can be used in
 CC any disease or disorder where blockage of N-type calcium channels is
 CC required, e.g. in the reduction of neuronal damage following ischemia,
 CC production of analgesia, or enhancement of opiate analgesia, in the
 CC treatment of schizophrenia, stimulant induced psychoses, hypertension,
 CC inflammation, and diseases which cause bronchotension, and also in the
 CC inhibition of progression of neuropathic pain. They can also be used in a
 CC screen to identify compounds with activity at N-type voltage sensitive
 CC calcium channels
 CC
 XX Sequence 25 AA;

Query Match 100.0%; Score 151; DB 3; Length 25;
 Best Local Similarity 100.0%; Pred. No. 3.7e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 Db 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 13
 AAB14352
 ID AAB14352 standard; peptide; 25 AA.

XX AAB14352;

XX 06-DEC-2000 (first entry)

XX Omega-conopeptide MVIIA/SNX-111.

XX Marine snail; omega-conopeptide; calcium channel blocker; MVIIA; SNX-111;
 KW toxin; analgesic; antiinflammatory; anticonvulsant; neuroleptic;
 KW norepinephrine release inhibitor; schizophrenia; tardive dyskinesia;
 KW acute dystonic reaction; inflammation; epilepsy.

XX Conus sp.

XX Key Location/Qualifiers

FT Disulfide-bond 1. .16

FT Disulfide-bond 8. .20

FT Disulfide-bond 15. .25

FT Modified-site /note= "C-terminal amide"

XX US6087091-A.

XX PD 11-JUL-2000.

XX PF 23-APR-1999; 99US-00298017.

XX PR 30-DEC-1991; 91US-00814759.

XX PR 15-APR-1993; 93US-00049794.

XX PR 03-JUL-1996; 96US-00675354.

XX PR 01-NOV-1996; 96US-00742774.

XX PR 21-AUG-1998; 98US-00138439.

XX (ELAN-) ELAN PHARM INC.

XX Singh T, Gohil KC, Valentino KL, Miljanich GP, Justice A;

XX WPI; 2000-490177/43.

XX Selecting a compound for producing analgesia involves measuring activity
 PT of test compound in blocking voltage-gated calcium channels, binding to
 PT omega conopeptide binding site and inhibiting norepinephrine release.
 XX Example 1; Fig 1; 58pp; English.

XX The present sequence is an omega-conopeptide from marine snails of the

CC genus Conus. Omega-conopeptides are components of peptide toxins produced

CC by the cone snails, and which act as calcium channel blockers. Natural

CC omega-conopeptides and their derivatives may be useful for producing
 CC analgesia in nociceptive and neuropathic pain. The peptides bind to omega
 CC -conopeptide binding sites, which are present mainly in neuronal tissue,
 CC and inhibit norepinephrine release from nervous tissue. Conopeptides such
 CC as MVIIA and TVIIA are effective as therapeutic agents for treating
 CC neurogenic conditions such as schizophrenia, tardive dyskinesia and acute
 CC dystonic reactions, inflammation and epilepsy

XX Sequence 25 AA;

Query Match 100.0%; Score 151; DB 3; Length 25;

Best Local Similarity 100.0%; Pred. No. 3.7e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 Db 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 14
 AAB92219

ID AAB92219 standard; peptide; 25 AA.

XX AAB92219;

XX 22-JUN-2001 (first entry)

XX Toxin peptide SEQ ID NO:1395.

XX Protection; endogenous therapeutic peptide; peptidase; conjugation;
 KW blood component; modification; succinimide; maleimido group; amino;
 KW hydroxyl; thiol; hormone; growth factor; neurotransmitter.

XX Homo sapiens.

XX Synthetic.

XX WO200069900-A2.

XX 23-NOV-2000.

XX 17-MAY-2000; 2000WO-US013576.

XX 17-MAY-1999; 99US-0134406P.

XX 10-SEP-1999; 99US-0153406P.

XX 15-OCT-1999; 99US-0159783P.

XX (CONJ-) CONJUCHEM INC.

XX Bridon DP, Ezrin AM, Milner PG, Holmes DL, Thibaudeau K;

XX WPI; 2001-112059/12.

XX Modifying and attaching therapeutic peptides to albumin prevents
 PT peptidase degradation, useful for increasing length of in vivo activity.

XX Disclosure; Page 653; 733pp; English.

XX The present invention describes a modified therapeutic peptide (I)
 CC comprising a therapeutically active amino acid region (III) and a
 CC reactive group (II) (e.g. succinimide and maleimido groups) attached to
 CC a less therapeutically active amino acid region (IV), which covalently
 CC bonds with amino/hydroxyl/thiol groups on blood components to form a
 CC peptidase stabilised therapeutic peptide composed of 3-50 amino acids.

XX (I) are useful for modifying therapeutic peptides e.g. hormones, growth
 CC factors and neurotransmitters, to protect them from peptidase activity in
 CC vivo for the treatment of various disorders. Endogenous therapeutic
 CC peptides are not suitable as drug candidates as they require frequent
 CC administration due to rapid degradation by peptidases in the body.

XX Modifying and attaching therapeutic peptides to albumin prevents or
 CC reduces the action of peptidases to increase length of activity (half
 CC life) and specificity as bonding to large molecules decreases

CC intracellular uptake and interference with physiological processes.

CC AAB90829 to AAB92441 represent peptides which can be used in the

CC exemplification of the present invention

XX Sequence 25 AA;
 SQ Query Match 100.0%; Score 151; DB 4; Length 25;
 Best Local Similarity 100.0%; Pred. No. 3.7e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 15

AAB19442
 ID AAB19442 standard; peptide; 25 AA.
 XX AAB19442;
 XX 06-MAR-2001 (first entry)
 DT Primary sequence of a natural omega-conopeptide MWIIA/SNX-111.
 DE Omega-conopeptide; voltage-gated calcium channel inhibitor; analgesic;
 KW peptide toxin; opiate; pain; neuronal damage; ischemic condition;
 KW schizophrenia; tardive dyskinesia; acute dystonic reaction; inflammation;
 KW epilepsy.
 XX Conus sp.
 OS Key Location/Qualifiers
 FH Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 FT Modified-site 25
 FT /note= "amidated C-terminal"

FT XX

PN XX

XX US6136786-A.

XX 24-OCT-2000.

PD XX

XX 09-SEP-1999; 99US-00392979.

PF XX

PR 30-DEC-1991; 91US-00814759.

PR 15-APR-1993; 93US-00049794.

PR 23-JUN-1993; 93US-00081863.

PR 03-JUL-1996; 96US-00675354.

PR 01-NOV-1996; 96US-00742774.

PR 21-AUG-1998; 98US-00138439.

PR 23-APR-1999; 99US-00298017.

XX (ELAN-) ELAN PHARM INC.

PA Singh T, Gohil KC, Valentino KL, Miljanich GP, Justice A;
 PI WPI; 2001-030946/04.
 DR Enhancing analgesia produced by opiates by administering an omega-
 XX conopeptide that inhibits electrically stimulated contraction of guinea
 PT pig ileum and binds to omega-conopeptide MWIIA binding sites in neuronal
 PT tissues.
 PS Disclosure; Fig 1; 58pp; English.
 XX The present sequence represents an omega-conopeptide. Omega-conopeptides
 CC are components of peptide toxins which act as voltage-gated calcium
 CC channel inhibitors. The peptides are used to enhance the analgesic effect
 CC produced by an opiate in a mammalian subject. The method comprises
 CC administering to the subject an omega-conopeptide which is able to
 CC inhibit electrically stimulated contraction of the guinea pig ileum and
 CC bind to omega-conopeptide MWIIA binding sites present in neuronal tissue.
 CC Omega-conopeptides are useful for enhancing the analgesic effect produced
 CC by an opiate. Omega-conopeptides may also be used in the treatment of

CC pain, in reducing neuronal damage related to an ischemic condition in
 CC mammals, and in treating schizophrenia, tardive dyskinesia and acute
 CC dystonic reactions, inflammation and epilepsy

XX Sequence 25 AA;

Query Match 100.0%; Score 151; DB 4; Length 25;
 Best Local Similarity 100.0%; Pred. No. 3.7e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 16

AAB97046
 ID AAB97046 standard; peptide; 25 AA.

XX AAB97046;
 AC AAB97046;
 DT 20-JUL-2001 (first entry)
 DE Omega-conch toxin MWIIA.
 KW Omega-conch; toxin; MWIIA; variant; pain; nerve cell damage.
 KW Unidentified.
 OS CN1280136-A.
 PN 17-JAN-2001.
 PD 10-JUL-2000; 2000CN-00109828.
 PF 10-JUL-2000; 2000CN-00109828.
 PR (LIUJ/) LIU J.
 XX Liu P, Liu J;
 PI WPI; 2001-282466/30.
 DR Gene sequence and amino-acid sequence of variant omega-conch toxin
 XX polypeptide, their preparation and medicinal use.
 PT Disclosure; Page 10 (disclosure); 16pp; Chinese.

XX The present sequence is provided in a specification relating to gene
 CC sequences and amino acid sequences of Omega-conch toxin (MWIIA) variant
 CC polypeptides. The polypeptides may be used for treating pain and nerve
 CC cell damage. The methionine at position 12 of natural Omega-conch toxin
 CC is changed into alanine, glycine, isoleucine or valine. The genes
 CC encoding the Omega-conch toxin and its variant polypeptides are connected
 CC serially into a polymer, and the Omega-conch toxin polymer is prepared
 CC using a prokaryotic or eukaryotic expression system

XX Sequence 25 AA;

Query Match 100.0%; Score 151; DB 4; Length 25;
 Best Local Similarity 100.0%; Pred. No. 3.7e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 17

AAO15124
 ID AAO15124 standard; peptide; 25 AA.

XX AAO15124;
 AC AAO15124;

XX DT 22-AUG-2002 (first entry)
XX DE Cone snail w-conotoxin peptide MVIIA.
XX DE Cone snail; venomous saliva; calcium channel blocking activity;
KW stenocardia; hypertension; myocarditis; arrhythmia; cerebral ischaemia;
KW w-conotoxin.
XX OS Conus sp.
XX PN JP2002080499-A.
XX PD 19-MAR-2002.
XX PF 01-SEP-2000; 2000JP-00266187.
XX PR 01-SEP-2000; 2000JP-00266187.
XX PA (SUNR) SUNTORY LTD.
XX DR WPI; 2002-421068/45.
XX PT A new peptide derived from venomous saliva of assassin bug, has calcium
PT channel blocking activity.
XX PS Disclosure; Page 4; 26pp; Japanese.
XX CC The invention comprises peptides having calcium channel blocking
CC activities which are derived from the venomous saliva of assassin bugs.
CC The calcium channel blocking peptides of the invention are useful for
CC treating stenocardia, hypertension, myocarditis, arrhythmia and cerebral
CC ischaemia. The present amino acid sequence represents a cone snail w-
CC conotoxin peptide
XX SQ Sequence 25 AA;
Query Match 100.0%; Score 151; DB 5; Length 25;
Best Local Similarity 100.0%; Pred. No. 3.7e-10;
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
RESULT 18
AAR12546
XX ID AAR12546 standard; protein; 26 AA.
XX AC AAR12546;
XX DT 05-SEP-1991 (first entry)
XX DE Omega conotoxin peptide analogue MVIIA(193).
XX KW neuronal calcium-channel antagonist; OCT; adrenaline release;
KW neuroprotective.
XX OS Synthetic.
XX FH Key Location/Qualifiers
FT Disulfide-bond 1. .16
FT Disulfide-bond 8. .20
FT Disulfide-bond 15. .25
XX PN WO9107980-A.
XX PD 13-JUN-1991.
XX PF 22-NOV-1989; 89US-00440094.
XX PR 22-NOV-1989; 89US-00440094.

XX PA (NEUR-) NEUREX CORP.
XX PI Miljanich GP, Bitner RS, Bowersox SS, Fox JA, Valentino KL;
PI Yamashiro DH;
XX DR WPI; 1991-192969/26.
XX PT Compens. for reducing ischaemia-related neuronal damage - contains
PT neuronal channel antagonist omega conotoxin peptide which blocks
PT norepinephrine release in central nervous system neuronal cells.
XX PS Disclosure; Fig 2; 74pp; English.
XX CC MVIIA(193) is an analogue of OCT peptide MVIIA in which a Gly residue is
CC added to the C-terminus. The analogue gave IC(50) for inhibition of
CC adrenaline release and Ki values within the ranges of those of OCT
CC peptides MVIIA, GVIA, and/or TVIA. It is thus a candidate for a
CC neuroprotective compound. See also AAR12542-5, AAR12547 and AAR13264-6
XX SQ Sequence 26 AA;
Query Match 100.0%; Score 151; DB 2; Length 26;
Best Local Similarity 100.0%; Pred. No. 3.8e-10;
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
RESULT 19
AAR37765
XX ID AAR37765 standard; peptide; 26 AA.
XX AC AAR37765;
XX DT 25-MAR-2003 (revised)
DT 08-SEP-1993 (first entry)
XX DE SNX-193.
XX KW Ischaemia; neuronal; omega-conotoxin; OCT; MVIIA; MVIIIC; MVIIID; MVIIIB;
KW GVIA; GVIIA; RVIA; SVIA; TVIA; SVIB; SNX-207; stroke; delayed treatment;
KW antihistamine; blood pressure; N-type voltage-gated Ca currents;
KW N-channel mediated neurotransmitter release.
XX OS Synthetic.
XX FH Key Location/Qualifiers
FT Disulfide-bond 1. .16
FT Disulfide-bond 8. .20
FT Disulfide-bond 15. .25
XX PN WO9310145-A1.
XX PD 27-MAY-1993.
XX PF 12-NOV-1992; 92WO-US009766.
XX PR 12-NOV-1991; 91US-00789913.
XX PR 17-JUL-1992; 92US-00916478.
XX PA (NEUR-) NEUREX CORP.
XX PI Miljanich GP, Bowersox SS, Fox JA, Valentino KL, Bitner RS;
PI Yamashiro DH;
XX DR WPI; 1993-182487/22.
XX PT Redn. of neuronal damage caused by ischaemia - by admin. of cpds. that
PT bind specifically to omega-conotoxin MVIIA binding sites.
XX

PS Disclosure; Fig 2; 103pp; English.

XX Ischaemia-related neuronal damage in mammals is reduced by admin., 4-24
 CC hr after onset of ischaemia, of a cpd. (I) which binds selectively to an
 CC omega-conotoxin (OCT) MWIIA site in neuronal tissue. (I) has selectivity
 CC at least 100 expressed as ratio of binding affinity for the MWIIA site to
 CC that for the MWIIC site. (I) is one of the OCTs MWIIA, MWIIB, GVIA, GVIIA
 CC or RVIA or it is the cpd. SNX-207. (I) is esp. used to reduce neuronal
 CC damage caused by stroke. By delaying admin. for some time (compare
 CC US051403 where cpds. are given within 1 hr of the onset of ischaemia) a
 CC greater redn. in neuronal damage is achieved. (I) is admin. e.g. by
 CC intracerebroventricular (ICV) injection at 0.1-20 microg/kg, but can also
 CC be given i.v. (opt. after treatment with antihistamines to minimise redn.
 CC in blood pressure caused by (I)). (I) is also at least as effective as
 CC the specified conotoxins for (1) selective inhibition of N-type voltage-
 CC gated Ca currents in neuronal tissue and (2) selective inhibition of N-
 CC channel mediated neurotransmitter release in neuronal tissue. Primary
 CC sequences of omega-conopeptides are given in AAR37752-62. Several analog
 CC omega-conopeptides are given in AAR37763-76. (Updated on 25-MAR-2003 to
 CC correct PN field.)

XX Sequence 26 AA;

Query Match 100.0%; Score 151; DB 2; Length 26;
 Best Local Similarity 100.0%; Pred. No. 3.8e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 CKGKGAKCSRLMYDCCTGSCRSKGC 25
 DB 1 CKGKGAKCSRLMYDCCTGSCRSKGC 25

RESULT 20

AAW19557
 ID AAW19557 standard; peptide; 26 AA.

AC AAW19557;

DT 14-OCT-1997 (first entry)

DE SNX-193, omega conopeptide derivative used for pain relief.

XX Conopeptide; cone snail; pain; analgesic; neuropathy; epidural;
 KW N-type voltage-sensitive calcium channel; block; Conus.

XX Synthetic.

XX Key Location/Qualifiers
 FH Disulfide-bond 1. .16
 FT Disulfide-bond 8. .20
 FT Disulfide-bond 15. .25

XX WO9701351-A1.

XX 16-JAN-1997.

XX 26-JUN-1996; 96WO-US011041.

XX 27-JUN-1995; 95US-00496847.

XX 08-MAR-1996; 96US-00613400.

XX (NEUR-) NEUREX CORP.

XX Amstutz GA, Bowersox SS, Gohil K, Adriaenssens PI, Kristipati R;
 PI Gadbois T, Pettus MR, Luther RR;

XX WPI; 1997-100012/09.

XX Stable omega conopeptide compositions - for producing analgesia and for
 PT inhibiting progression of neuropathic pain disorders.

XX Disclosure; Fig 3; 47pp; English.

XX

CC AAW19555-W19572 are omega conopeptides (OCs) derived from natural
 CC peptides from Conus sp. (cone snails). The peptides and their analogues
 CC are used as analgesics acting by blocking N-type voltage-sensitive
 CC calcium channels. The OCs can be used to treat neuropathic pain as a
 CC result of e.g. insult to the spinal cord or peripheral nerves, cancer,
 CC bone degenerative diseases, AIDS, reflex sympathetic dystrophy, herpes
 CC zoster neuropathy, diabetic neuropathy, hyperesthesia, allodynia or
 CC hyperalgesia. The OCs are preferably administered in a medicament or
 CC epidural route in a continuous infusion or sustained release formulation.
 CC The OCs can provide pain relief when administered epidurally in the
 CC absence of a permeation enhancer, at doses that are comparable to
 CC effective analgesic doses using intrathecal administration. OC
 CC formulations comprising an OC and a carboxylic acid buffer anti-oxidant.
 CC They also confer stability to solutions containing them for prolonged
 CC treatment methods and long-term storage

XX Sequence 26 AA;

Query Match 100.0%; Score 151; DB 2; Length 26;
 Best Local Similarity 100.0%; Pred. No. 3.8e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 CKGKGAKCSRLMYDCCTGSCRSKGC 25
 DB 1 CKGKGAKCSRLMYDCCTGSCRSKGC 25

RESULT 21

AAW56485

ID AAW56485 standard; peptide; 26 AA.

AC AAW56485;

DT 16-FEB-2000 (first entry)

DE Analogue omega conopeptide SNX-193.

XX Omega conopeptide; analgesic; nociceptive; neuropathic; pain; conotoxin;
 KW marine snail; peptide toxin; inflammation; binding;
 KW voltage-gated calcium channel; inhibition; norepinephrine; noradrenaline;
 KW anti-inflammatory.

XX Conus sp.

XX Key Location/Qualifiers
 FH Disulfide-bond 1. .16
 FT Disulfide-bond 8. .20
 FT Disulfide-bond 15. .25

XX US5994305-A.

XX 30-NOV-1999.

XX 21-AUG-1998; 98US-00138439.

XX 30-DEC-1991; 91US-00814759.

XX 15-APR-1993; 93US-00049794.

XX 03-JUL-1996; 96US-00675354.

XX 01-NOV-1996; 96US-00742774.

XX (ELAN-) ELAN PHARM INC.

XX Justice A, Singh T, Valentino KL, Miljanich GP, Gohil KC;

XX WPI; 2000-038270/03.

XX Measuring the activity of test compounds in blocking voltage-gated
 PT calcium channels, binding to the omega conopeptide binding site and
 PT inhibiting norepinephrine (noradrenaline) release for treating
 PT inflammation.

XX Disclosure; Fig 2; 47pp; English.

XX

CC A method has been developed of selecting a test compound for treating
 CC inflammation. The method comprises measuring the activity of the test
 CC compound in blocking voltage-gated calcium channels, binding to the omega
 CC conopeptide binding site and inhibiting norepinephrine (noradrenaline)
 CC release from nervous tissue. The method is useful for selecting compounds
 CC for treating inflammation. The selected compounds are capable of
 CC producing analgesia in a mammalian subject with chronic or intractable
 CC pain. Analgesia caused by selected compounds may reduce the reliance on
 CC opioid analgesic agents of the prior art which cause dependency and
 CC tolerance, requiring potentially dangerous increases in opioid doses to
 CC achieve the analgesic effect. The present sequence represents an omega
 CC conopeptide given in the present invention
 XX
 XX Sequence 26 AA;

Query Match 100.0%; Score 151; DB 3; Length 26;
 Best Local Similarity 100.0%; Pred. No. 3.8e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 |||||
 Db 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 22

AAR13266
 ID AAR13266 standard; protein; 27 AA.

XX
 AC AAR13266;

DT 05-SEP-1991 (first entry)

XX Omega conotoxin peptide analogue MWIIA(197).

DE neuronal calcium-channel antagonist; OCT; adrenaline release;
 KW neuroprotective.

XX Synthetic.

XX Key Location/Qualifiers

FT Disulfide-bond 3..18

FT Disulfide-bond 10..22

FT Disulfide-bond 17..27

FT Modified-site 27 /label= amidated carboxy terminal

FT
 XX WO9107980-A.

XX 13-JUN-1991.

XX 22-NOV-1989; 89US-00440094.

XX 22-NOV-1989; 89US-00440094.

XX (NEUR-) NEUREX CORP.

XX Miljanjich GP, Bitner RS, Bowersox SS, Fox JA, Valentino KL;

PI Yamashiro DH;

XX WPI; 1991-192969/26.

XX Compan. for reducing ischaemia-related neuronal damage - contains
 PT neuronal channel antagonist omega conotoxin peptide which blocks
 PT norepinephrine release in central nervous system neuronal cells.

XX Disclosure; Fig 2; 74pp; English.

XX MWIIA(197) is an analogue of OCT peptide MWIIA in which an Asn-Ser
 CC dipeptide has been added to the N-terminus. residue replaces Lys at
 CC position 2. The analogue gave IC(50) for inhibition of adrenaline release
 CC and Ki values outside the ranges of those of OCT peptides MWIIA, GVIA,
 CC and/or TVIA. It is thus not a candidate for a neuroprotective compound.
 CC See also AAR12542-7, AAR13264-5

XX Sequence 27 AA;

Query Match 100.0%; Score 151; DB 2; Length 27;
 Best Local Similarity 100.0%; Pred. No. 3.9e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 |||||
 Db 3 CKGKGAKCSRLMYDCTGSCRSKGC 27

RESULT 23

AAR13265
 ID AAR13265 standard; protein; 27 AA.

XX
 AC AAR13265;

DT 05-SEP-1991 (first entry)

XX Omega conotoxin peptide analogue MWIIA(196).

XX neuronal calcium-channel antagonist; OCT; adrenaline release;
 KW neuroprotective.

XX Synthetic.

XX Key Location/Qualifiers

FT Disulfide-bond 2..17

FT Disulfide-bond 9..21

FT Disulfide-bond 16..26

XX WO9107980-A.

XX 13-JUN-1991.

XX 22-NOV-1989; 89US-00440094.

XX 22-NOV-1989; 89US-00440094.

XX (NEUR-) NEUREX CORP.

XX Miljanjich GP, Bitner RS, Bowersox SS, Fox JA, Valentino KL;

PI Yamashiro DH;

XX WPI; 1991-192969/26.

XX Compan. for reducing ischaemia-related neuronal damage - contains
 PT neuronal channel antagonist omega conotoxin peptide which blocks
 PT norepinephrine release in central nervous system neuronal cells.

XX Disclosure; Fig 2; 74pp; English.

XX MWIIA(196) is an analogue of OCT peptide MWIIA in which an Asn residue is
 CC added to the N-terminus and a Gly residue is added to the C-terminus.
 CC The analogue gave IC(50) for inhibition of adrenaline release and Ki
 CC values within the ranges of those of OCT peptides MWIIA, GVIA, and/or
 CC TVIA. It is thus a candidate for a neuroprotective compound. See also
 CC AAR12542-7, AAR13264 and AAR13266

XX Sequence 27 AA;

Query Match 100.0%; Score 151; DB 2; Length 27;
 Best Local Similarity 100.0%; Pred. No. 3.9e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 |||||
 Db 2 CKGKGAKCSRLMYDCTGSCRSKGC 26

RESULT 24

AAR37768

ID AAR37768 standard; peptide; 27 AA.
 AC AAR37768;
 XX
 DT 25-MAR-2003 (revised)
 DT 08-SEP-1993 (first entry)
 XX
 DE SNX-196.
 XX
 KW Ischaemia; neuronal; omega-conotoxin; OCT; MVIIA; MVIIC; MVIID; MVIIB;
 KW GVIA; GVIIA; RVIA; SVIA; TWIA; SVIB; SNX-207; stroke; delayed treatment;
 KW antihistamine; blood pressure; N-type voltage-gated Ca currents;
 KW N-channel mediated neurotransmitter release.
 XX
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Disulfide-bond 2. .17
 FT Disulfide-bond 9. .21
 FT Disulfide-bond 16. .26
 XX
 PN WO9310145-A1.
 XX
 PD 27-MAY-1993.
 XX
 PF 12-NOV-1992; 92WO-US009766.
 XX
 PR 12-NOV-1991; 91US-00789913.
 PR 17-JUL-1992; 92US-00916478.
 XX
 PA (NEUR-) NEUREX CORP.
 XX
 PI Miljanich GP, Bowersox SS, Fox JA, Valentino KL, Bitner RS;
 PI Yamashiro DH;
 XX
 DR WPI; 1993-182487/22.
 XX
 PT Redn. of neuronal damage caused by ischaemia - by admin. of cpds. that
 PT bind specifically to omega-conotoxin MVIIA binding sites.
 XX
 PS Disclosure; Fig 2; 103pp; English.
 XX
 CC Ischaemia-related neuronal damage in mammals is reduced by admin., 4-24
 CC hr after onset of ischaemia, of a cpd. (1) which binds selectively to an
 CC omega-conotoxin (OCT) MVIIA site in neuronal tissue. (1) has selectivity
 CC at least 100 expressed as ratio of binding affinity for the MVIIA site to
 CC that for the MVIIC site. (1) is one of the OCTs MVIIA, MVIIB, GVIA, GVIIA
 CC or RVIA or it is the cpd. SNX-207. (1) is esp. used to reduce neuronal
 CC damage caused by stroke. By delaying admin. for some time (compare
 CC US5051403 where cpds. are given within 1 hr of the onset of ischaemia) a
 CC greater redn. in neuronal damage is achieved. (1) is admin. e.g. by
 CC intracerebroventricular (ICV) injection at 0.1-20 microg/kg, but can also
 CC be given i.v. (opt. after treatment with antihistamines to minimise redn.
 CC in blood pressure caused by (1)). (1) is also at least as effective as
 CC the specified conotoxins for (1) selective inhibition of N-type voltage-
 CC gated Ca currents in neuronal tissue and (2) selective inhibition of N-
 CC channel mediated neurotransmitter release in neuronal tissue. Primary
 CC sequences of omega-conopeptides are given in AAR37752-62. Several analog
 CC omega-conopeptides are given in AAR37763-76. (Updated on 25-MAR-2003 to
 CC correct PN field.)
 XX
 SQ Sequence 27 AA;

Query Match 100.0%; Score 151; DB 2; Length 27;
 Best Local Similarity 100.0%; Pred. No. 3.9e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 CKGKAGKCSRLMYDCTGSCRSKGC 25
 DB 2 CKGKAGKCSRLMYDCTGSCRSKGC 26

RESULT 25

AAR37769
 ID AAR37769 standard; peptide; 27 AA.
 XX
 AC AAR37769;
 XX
 DT 25-MAR-2003 (revised)
 DT 08-SEP-1993 (first entry)
 XX
 DE SNX-197.
 XX
 KW Ischaemia; neuronal; omega-conotoxin; OCT; MVIIA; MVIIC; MVIID; MVIIB;
 KW GVIA; GVIIA; RVIA; SVIA; TWIA; SVIB; SNX-207; stroke; delayed treatment;
 KW antihistamine; blood pressure; N-type voltage-gated Ca currents;
 KW N-channel mediated neurotransmitter release.
 XX
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Disulfide-bond 3. .18
 FT Disulfide-bond 10. .22
 FT Disulfide-bond 17. .27
 XX
 PN WO9310145-A1.
 XX
 PD 27-MAY-1993.
 XX
 PF 12-NOV-1992; 92WO-US009766.
 XX
 PR 12-NOV-1991; 91US-00789913.
 PR 17-JUL-1992; 92US-00916478.
 XX
 PA (NEUR-) NEUREX CORP.
 XX
 PI Miljanich GP, Bowersox SS, Fox JA, Valentino KL, Bitner RS;
 PI Yamashiro DH;
 XX
 DR WPI; 1993-182487/22.
 XX
 PT Redn. of neuronal damage caused by ischaemia - by admin. of cpds. that
 PT bind specifically to omega-conotoxin MVIIA binding sites.
 XX
 PS Disclosure; Fig 2; 103pp; English.
 XX
 CC The C-terminal is amidated. Ischaemia-related neuronal damage in mammals
 CC is reduced by admin., 4-24 hr after onset of ischaemia, of a cpd. (1)
 CC which binds selectively to an omega-conotoxin (OCT) MVIIA site in
 CC neuronal tissue. (1) has selectivity at least 100 expressed as ratio of
 CC binding affinity for the MVIIA site to that for the MVIIC site. (1) is
 CC one of the OCTs MVIIA, MVIIB, GVIA, GVIIA or RVIA or it is the cpd. SNX-
 CC 207. (1) is esp. used to reduce neuronal damage caused by stroke. By
 CC delaying admin. for some time (compare US5051403 where cpds. are given
 CC within 1 hr of the onset of ischaemia) a greater redn. in neuronal damage
 CC is achieved. (1) is admin. e.g. by intracerebroventricular (ICV)
 CC injection at 0.1-20 microg/kg, but can also be given i.v. (opt. after
 CC treatment with antihistamines to minimise redn. in blood pressure caused
 CC by (1)). (1) is also at least as effective as the specified conotoxins
 CC for (1) selective inhibition of N-type voltage-gated Ca currents in
 CC neuronal tissue and (2) selective inhibition of N-channel mediated
 CC neurotransmitter release in neuronal tissue. Primary sequences of omega-
 CC conopeptides are given in AAR37752-62. Several analog omega-conopeptides
 CC are given in AAR37763-76. (Updated on 25-MAR-2003 to correct PN field.)
 XX
 SQ Sequence 27 AA;

Query Match 100.0%; Score 151; DB 2; Length 27;
 Best Local Similarity 100.0%; Pred. No. 3.9e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 CKGKAGKCSRLMYDCTGSCRSKGC 25
 DB 3 CKGKAGKCSRLMYDCTGSCRSKGC 27

RESULT 26

AAW19561
ID AAW19561 standard; peptide; 27 AA.
XX AC
XX AAW19561;
XX DT
XX 14-OCT-1997 (first entry)
XX DE
XX SNX-197, omega conopeptide derivative used for pain relief.
XX KW
XX Conopeptide; cone snail; pain; analgesic; neuropathy; epidural;
XX N-type voltage-sensitive calcium channel; block; Conus.
XX OS
XX Synthetic.
XX FH
XX Key Location/Qualifiers
XX Disulfide-bond 3. .18
XX Disulfide-bond 10. .22
XX Disulfide-bond 17. .27
XX Modified-site 27
XX /note= "amidated"

XX WO9701351-A1.
XX 16-JAN-1997.
XX 26-JUN-1996; 96WO-US011041.
XX 27-JUN-1995; 95US-00496847.
XX 08-MAR-1996; 96US-00613400.
XX (NEUR-) NEUREX CORP.
XX Amstutz GA, Bowersox SS, Gohil K, Adriaenssens PI, Kristipati R;
XX Gadbois T, Pettus MR, Luther RR;
XX WPI; 1997-100012/09.
XX Stable omega conopeptide compositions - for producing analgesia and for
XX inhibiting progression of neuropathic pain disorders.
XX Disclosure; Fig 3; 47pp; English.

AAW19555-W19572 are omega conopeptides (OCs) derived from natural peptides from Conus sp. (cone snails). The peptides and their analogues are used as analgesics acting by blocking N-type voltage-sensitive calcium channels. The OCs can be used to treat neuropathic pain as a result of e.g. insult to the spinal cord or peripheral nerves, cancer, bone degenerative diseases, AIDS, reflex sympathetic dystrophy, herpes zoster neuropathy, diabetic neuropathy, hyperesthesia, allodynia or hyperalgesia. The OCs are preferably administered in a medicament via an epidural route in a continuous infusion or sustained release formulation. The OCs can provide pain relief when administered epidurally in the absence of a permeation enhancer, at doses that are comparable to effective analgesic doses using intrathecal administration. OC formulations comprising an OC and a carboxylic acid buffer anti-oxidant. They also confer stability to solutions containing them for prolonged treatment methods and long-term storage

XX Sequence 27 AA;

Query Match 100.0%; Score 151; DB 2; Length 27;
Best Local Similarity 100.0%; Pred. No. 3.9e-10;
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
DB 3 CKGKGAKCSRLMYDCTGSCRSKGC 27

RESULT 27

AAW19560
ID AAW19560 standard; peptide; 27 AA.

XX AC
XX AAW19560;
XX DT
XX 14-OCT-1997 (first entry)
XX DE
XX SNX-196, omega conopeptide derivative used for pain relief.
XX KW
XX Conopeptide; cone snail; pain; analgesic; neuropathy; epidural;
XX N-type voltage-sensitive calcium channel; block; Conus.
XX OS
XX Synthetic.
XX FH
XX Key Location/Qualifiers
XX Disulfide-bond 2. .17
XX Disulfide-bond 9. .21
XX Disulfide-bond 16. .26
XX WO9701351-A1.
XX 16-JAN-1997.
XX 26-JUN-1996; 96WO-US011041.
XX 27-JUN-1995; 95US-00496847.
XX 08-MAR-1996; 96US-00613400.
XX (NEUR-) NEUREX CORP.
XX Amstutz GA, Bowersox SS, Gohil K, Adriaenssens PI, Kristipati R;
XX Gadbois T, Pettus MR, Luther RR;
XX WPI; 1997-100012/09.
XX Stable omega conopeptide compositions - for producing analgesia and for
XX inhibiting progression of neuropathic pain disorders.
XX Disclosure; Fig 3; 47pp; English.

AAW19555-W19572 are omega conopeptides (OCs) derived from natural peptides from Conus sp. (cone snails). The peptides and their analogues are used as analgesics acting by blocking N-type voltage-sensitive calcium channels. The OCs can be used to treat neuropathic pain as a result of e.g. insult to the spinal cord or peripheral nerves, cancer, bone degenerative diseases, AIDS, reflex sympathetic dystrophy, herpes zoster neuropathy, diabetic neuropathy, hyperesthesia, allodynia or hyperalgesia. The OCs are preferably administered in a medicament via an epidural route in a continuous infusion or sustained release formulation. The OCs can provide pain relief when administered epidurally in the absence of a permeation enhancer, at doses that are comparable to effective analgesic doses using intrathecal administration. OC formulations comprising an OC and a carboxylic acid buffer anti-oxidant. They also confer stability to solutions containing them for prolonged treatment methods and long-term storage

XX Sequence 27 AA;

Query Match 100.0%; Score 151; DB 2; Length 27;
Best Local Similarity 100.0%; Pred. No. 3.9e-10;
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
DB 2 CKGKGAKCSRLMYDCTGSCRSKGC 26

RESULT 28

AAW56488
ID AAY56488 standard; peptide; 27 AA.
XX AC
XX AAY56488;
XX DT
XX 16-FEB-2000 (first entry)
XX

DE Analogé omega conopeptide SNX-196.
 XX Omega conopeptide; analgesic; nociceptive; neuropathic; pain; conotoxin;
 KW marine snail; peptide toxin; inflammation; binding;
 KW voltage-gated calcium channel; inhibition; norepinephrine; noradrenaline;
 KW anti-inflammatory.
 XX Conus sp.
 XX Key Location/Qualifiers
 FH Disulfide-bond 2. .17
 FT Disulfide-bond 9. .21
 FT Disulfide-bond 16. .26
 XX US5994305-A.
 PN 30-NOV-1999.
 PD 21-AUG-1998; 98US-00138439.
 XX 30-DEC-1991; 91US-00814759.
 PR 15-APR-1993; 93US-00047994.
 PR 03-JUL-1996; 96US-00675354.
 PR 01-NOV-1996; 96US-00742774.
 XX (ELAN-) ELAN PHARM INC.
 PA Justice A, Singh T, Valentino KL, Miljanich GP, Gohil KC;
 PI WPI; 2000-038270/03.
 XX Measuring the activity of test compounds in blocking voltage-gated
 XX calcium channels, binding to the omega conopeptide binding site and
 XX inhibiting norepinephrine (noradrenaline) release for treating
 XX inflammation.
 PS Disclosure; Fig 2; 47pp; English.
 XX A method has been developed of selecting a test compound for treating
 XX inflammation. The method comprises measuring the activity of the test
 XX compound in blocking voltage-gated calcium channels, binding to the omega
 XX conopeptide binding site and inhibiting norepinephrine (noradrenaline)
 XX release from nervous tissue. The method is useful for selecting compounds
 XX for treating inflammation. The selected compounds are capable of
 XX producing analgesia in a mammalian subject with chronic or intractable
 XX pain. Analgesia caused by selected compounds may reduce the reliance on
 XX opioid analgesic agents of the prior art which cause dependency and
 XX tolerance, requiring potentially dangerous increases in opioid doses to
 XX achieve the analgesic effect. The present sequence represents an omega
 XX conopeptide given in the present invention
 SQ Sequence 27 AA;
 Query Match 100.0%; Score 151; DB 3; Length 27;
 Best Local Similarity 100.0%; Pred. No. 3.9e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 CKGGKACSRMLMYDCTGSCRSKGC 25
 DB 2 CKGGKACSRMLMYDCTGSCRSKGC 26
 RESULT 29
 AAY56489
 ID AAY56489 standard; peptide; 27 AA.
 XX AAY56489;
 AC AAY56489;
 XX 16-FEB-2000 (first entry)
 DT Analogue omega conopeptide SNX-197.
 DE Omega conopeptide; analgesic; nociceptive; neuropathic; pain; conotoxin;
 XX Omega conopeptide; analgesic; nociceptive; neuropathic; pain; conotoxin;
 KW Omega conopeptide; analgesic; nociceptive; neuropathic; pain; conotoxin;
 KW traumatic brain injury; migraine; epilepsy; Parkinson's disease;

KW marine snail; peptide toxin; inflammation; binding;
 KW voltage-gated calcium channel; inhibition; norepinephrine; noradrenaline;
 XX anti-inflammatory.
 XX Conus sp.
 XX Key Location/Qualifiers
 FH Disulfide-bond 3. .18
 FT Disulfide-bond 10. .22
 FT Disulfide-bond 17. .27
 FT Modified-site 27
 XX /note= "amidated"
 XX US5994305-A.
 PN 30-NOV-1999.
 PD 21-AUG-1998; 98US-00138439.
 XX 30-DEC-1991; 91US-00814759.
 PR 15-APR-1993; 93US-00047994.
 PR 03-JUL-1996; 96US-00675354.
 PR 01-NOV-1996; 96US-00742774.
 XX (ELAN-) ELAN PHARM INC.
 PA Justice A, Singh T, Valentino KL, Miljanich GP, Gohil KC;
 PI WPI; 2000-038270/03.
 XX Measuring the activity of test compounds in blocking voltage-gated
 XX calcium channels, binding to the omega conopeptide binding site and
 XX inhibiting norepinephrine (noradrenaline) release for treating
 XX inflammation.
 PS Disclosure; Fig 2; 47pp; English.
 XX A method has been developed of selecting a test compound for treating
 XX inflammation. The method comprises measuring the activity of the test
 XX compound in blocking voltage-gated calcium channels, binding to the omega
 XX conopeptide binding site and inhibiting norepinephrine (noradrenaline)
 XX release from nervous tissue. The method is useful for selecting compounds
 XX for treating inflammation. The selected compounds are capable of
 XX producing analgesia in a mammalian subject with chronic or intractable
 XX pain. Analgesia caused by selected compounds may reduce the reliance on
 XX opioid analgesic agents of the prior art which cause dependency and
 XX tolerance, requiring potentially dangerous increases in opioid doses to
 XX achieve the analgesic effect. The present sequence represents an omega
 XX conopeptide given in the present invention
 SQ Sequence 27 AA;
 Query Match 100.0%; Score 151; DB 3; Length 27;
 Best Local Similarity 100.0%; Pred. No. 3.9e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 CKGGKACSRMLMYDCTGSCRSKGC 25
 DB 3 CKGGKACSRMLMYDCTGSCRSKGC 27
 RESULT 30
 AAY84655
 ID AAY84655 standard; peptide; 29 AA.
 XX AAY84655;
 AC AAY84655;
 XX 25-JUL-2000 (first entry)
 DT Amino acid sequence of a cyclised conotoxin peptide.
 DE Cyclised conotoxin; omega-conotoxin; neurological disorder; pain; stroke;
 XX Cyclised conotoxin; omega-conotoxin; neurological disorder; pain; stroke;
 KW traumatic brain injury; migraine; epilepsy; Parkinson's disease;

KW Alzheimer's disease; multiple sclerosis; depression; alpha-conotoxin;
KW neuropsychiatric disorder; schizophrenia; Tourette's syndrome;
KW mu-conotoxin.
XX
OS Synthetic.
OS Conus sp.
XX
FH Key Location/Qualifiers
FT Misc-difference 1. .29 /note= "peptide is cyclised via these residues"
FT Peptide 1. .25 /note= "conotoxin"
FT Peptide 26. .29 /note= "linker"
FT
XX WO200015654-A1.
PN
XX 23-MAR-2000.
PD
XX 14-SEP-1999; 99WO-AU000769.
PF
XX 14-SEP-1998; 98AU-00005895.
PR
XX (UYQU) UNIV QUEENSLAND.
PA
XX Craik DJ, Daly NL, Nielsen KJ;
PI WPI; 2000-271376/23.
XX
DR Novel cyclized conotoxin peptides useful in the therapeutic treatment of
PT diseases in humans.
PT
XX Claim 10; Page 31; 43pp; English.
XX
XX AAY84654-58 represent cyclised conotoxin peptides of the invention. The
CC cyclised peptides have improved properties, compared to their linear
CC counterparts. These include resistance to cleavage by proteases, high
CC chemical stability, improved biophysical properties, reduced side effects
CC and improved bioavailability. Cyclised omega-conotoxin peptides block N-
CC type calcium channels, and so may be useful in the treatment of
CC neurological disorders such as acute and chronic pain, stroke, traumatic
CC brain injury, migraine, epilepsy, Parkinson's disease, Alzheimer's
CC disease, multiple sclerosis, and depression. Alpha-conotoxins may be
CC useful in the treatment of neuropsychiatric disorders such as
CC schizophrenia, Parkinson's disease, Alzheimer's disease and Tourette's
CC syndrome. Mu-conotoxins interact with neuronal channels and may be used
CC to treat chronic and neuropathic pain. The cyclised conotoxin peptides
CC can be also used as neuropharmacological probes. Antibodies raised
CC against the peptides are useful as therapeutic or diagnostic agents, and
XX can be used to screen for the peptides
XX
SQ Sequence 29 AA;
Query Match 100.0%; Score 151; DB 3; Length 29;
Best Local Similarity 100.0%; Pred. No. 4.2e-10;
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
RESULT 31
AAY84656
ID AAY84656 standard; peptide; 32 AA.
XX
AC AAY84656;
XX
DT 25-JUL-2000 (first entry)
XX
DE Amino acid sequence of a cyclised conotoxin peptide.
XX
KW Cyclised conotoxin; omega-conotoxin; neurological disorder; pain; stroke;

KW traumatic brain injury; migraine; epilepsy; Parkinson's disease;
KW Alzheimer's disease; multiple sclerosis; depression; alpha-conotoxin;
KW neuropsychiatric disorder; schizophrenia; Tourette's syndrome;
KW mu-conotoxin.
XX
OS Synthetic.
OS Conus sp.
XX
FH Key Location/Qualifiers
FT Misc-difference 1. .32 /note= "peptide is cyclised via these residues"
FT Peptide 1. .4 /note= "linker"
FT Peptide 5. .29 /note= "conotoxin"
FT Peptide 30. .32 /note= "linker"
FT
XX WO200015654-A1.
PN
XX 23-MAR-2000.
PD
XX 14-SEP-1999; 99WO-AU000769.
PF
XX 14-SEP-1998; 98AU-00005895.
PR
XX (UYQU) UNIV QUEENSLAND.
PA
XX Craik DJ, Daly NL, Nielsen KJ;
PI WPI; 2000-271376/23.
XX
DR Novel cyclized conotoxin peptides useful in the therapeutic treatment of
PT diseases in humans.
PT
XX Claim 10; Page 31; 43pp; English.
XX
XX AAY84654-58 represent cyclised conotoxin peptides of the invention. The
CC cyclised peptides have improved properties, compared to their linear
CC counterparts. These include resistance to cleavage by proteases, high
CC chemical stability, improved biophysical properties, reduced side effects
CC and improved bioavailability. Cyclised omega-conotoxin peptides block N-
CC type calcium channels, and so may be useful in the treatment of
CC neurological disorders such as acute and chronic pain, stroke, traumatic
CC brain injury, migraine, epilepsy, Parkinson's disease, Alzheimer's
CC disease, multiple sclerosis, and depression. Alpha-conotoxins may be
CC useful in the treatment of neuropsychiatric disorders such as
CC schizophrenia, Parkinson's disease, Alzheimer's disease and Tourette's
CC syndrome. Mu-conotoxins interact with neuronal channels and may be used
CC to treat chronic and neuropathic pain. The cyclised conotoxin peptides
CC can be also used as neuropharmacological probes. Antibodies raised
CC against the peptides are useful as therapeutic or diagnostic agents, and
XX can be used to screen for the peptides
XX
SQ Sequence 32 AA;
Query Match 100.0%; Score 151; DB 3; Length 32;
Best Local Similarity 100.0%; Pred. No. 4.5e-10;
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
DB 5 CKGKGAKCSRLMYDCTGSCRSKGC 29
RESULT 32
AAY84654
ID AAY84654 standard; peptide; 32 AA.
XX
AC AAY84654;
XX
DT 25-JUL-2000 (first entry)
XX

DE Amino acid sequence of a cyclised conotoxin peptide.
 XX
 XX Cyclised conotoxin; omega-conotoxin; neurological disorder; pain; stroke;
 KW traumatic brain injury; migraine; epilepsy; Parkinson's disease;
 KW Alzheimer's disease; multiple sclerosis; depression; alpha-conotoxin;
 KW neuropsychiatric disorder; schizophrenia; Tourette's syndrome;
 KW mu-conotoxin.
 XX
 XX Synthetic.
 OS Conus sp.
 XX
 XX
 FH Key Location/Qualifiers
 FT Misc-difference 1..32
 FT /note= "peptide is cyclised via these residues"
 FT Peptide 1..26
 FT /note= "conotoxin"
 FT Peptide 26..32
 FT /note= "linker"
 FT
 XX WO200015654-A1.
 PN
 XX
 XX 23-MAR-2000.
 PD
 XX
 XX 14-SEP-1999; 99WO-AU000769.
 PF
 XX
 XX 14-SEP-1998; 98AU-00005895.
 PR
 XX
 XX (UYQU) UNIV QUEENSLAND.
 PA
 XX
 XX Craik DJ, Daly NL, Nielsen KJ;
 PI
 XX
 XX WPI; 2000-271376/23.
 DR
 XX
 XX Novel cyclized conotoxin peptides useful in the therapeutic treatment of
 PT diseases in humans.
 PT
 XX
 XX Claim 10; Page 31; 43pp; English.
 PS
 XX
 XX AAY84654-58 represent cyclised conotoxin peptides of the invention. The
 CC cyclised peptides have improved properties, compared to their linear
 CC counterparts. These include resistance to cleavage by proteases, high
 CC chemical stability, improved biophysical properties, reduced side effects
 CC and improved bioavailability. Cyclised omega-conotoxin peptides block N-
 CC type calcium channels, and so may be useful in the treatment of
 CC neurological disorders such as acute and chronic pain, stroke, traumatic
 CC brain injury, migraine, epilepsy, Parkinson's disease, Alzheimer's
 CC disease, multiple sclerosis, and depression. Alpha-conotoxins may be
 CC useful in the treatment of neuropsychiatric disorders such as
 CC schizophrenia, Parkinson's disease, Alzheimer's disease and Tourette's
 CC syndrome. Mu-conotoxins interact with neuronal channels and may be used
 CC to treat chronic and neuropathic pain. The cyclised conotoxin peptides
 CC can be also used as neuropharmacological probes. Antibodies raised
 CC against the peptides are useful as therapeutic or diagnostic agents, and
 CC can be used to screen for the peptides
 XX
 XX Sequence 32 AA;
 SQ
 Query Match 100.0%; Score 151; DB 3; Length 32;
 Best Local Similarity 100.0%; Pred. No. 4.5e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DE
 XX
 XX RESULT 33
 AAR12547
 ID AAR12547 standard; protein; 25 AA.
 XX
 XX AAR12547;
 AC
 XX
 XX 05-SEP-1991 (first entry)
 DT

XX Omega conotoxin peptide analogue MVIIA(194).
 DE
 XX neuronal calcium-channel antagonist; OCT; adrenaline release;
 KW neuroprotective.
 KW
 XX Synthetic.
 OS
 XX
 FH Key Location/Qualifiers
 FT Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Misc-difference 12
 FT /label= Nle
 FT Disulfide-bond 15..25
 FT Modified-site 25
 FT /label= amidated carboxy terminal
 FT
 XX WO9107980-A.
 PN
 XX
 XX 13-JUN-1991.
 PD
 XX
 XX 22-NOV-1989; 89US-00440094.
 PF
 XX
 XX 22-NOV-1989; 89US-00440094.
 PR
 XX
 XX (NEUR-) NEUREX CORP.
 PA
 XX
 XX Miljanjich GP, Bitner RS, Bowersox SS, Fox JA, Valentino KL;
 PI Yamashiro DH;
 PI
 XX
 XX WPI; 1991-192969/26.
 DR
 XX
 XX Compn. for reducing ischaemia-related neuronal damage - contains
 PT neuronal channel antagonist omega conotoxin peptide which blocks
 PT norepinephrine release in central nervous system neuronal cells.
 PT
 XX
 XX Disclosure; Fig 2; 74pp; English.
 PS
 XX
 XX MVIIA(194) is an analogue of OCT peptide MVIIA in which a Nle residue
 CC replaces Met at position 12. The analogue gave IC(50) for inhibition of
 CC adrenaline release and Ki values within the ranges of those of OCT
 CC peptides MVIIA, GVIA, and/or TVIA. It is thus a candidate for a
 CC neuroprotective compound. See also AAR12542-6 and AAR13264-6
 XX
 XX Sequence 25 AA;
 SQ
 Query Match 98.0%; Score 148; DB 2; Length 25;
 Best Local Similarity 96.0%; Pred. No. 8e-10;
 Matches 24; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
 QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DE
 XX
 XX RESULT 34
 AAB97043
 ID AAB97043 standard; peptide; 25 AA.
 XX
 XX AAB97043;
 AC
 XX
 XX 20-JUL-2001 (first entry)
 DT
 XX
 XX Omega-conch toxin MVIIA variant polypeptide #3.
 DE
 XX
 XX Omega-conch; toxin; MVIIA; variant; pain; nerve cell damage.
 KW
 XX
 XX Unidentified.
 OS
 XX
 XX CN1280136-A.
 PN
 XX
 XX 17-JAN-2001.
 DT

```
PF 10-JUL-2000; 2000CN-00109828.
XX
PR 10-JUL-2000; 2000CN-00109828.
XX
PA (LIUJ/) LIU J.
XX
PI Liu P, Liu J;
XX
DR WPI; 2001-282466/30.
XX
PT Gene sequence and amino-acid sequence of variant omega-conch toxin
XX polypeptide, their preparation and medicinal use.
XX
PS Claim 3; Page 1 (claims); 16pp; Chinese.
XX
CC The present sequence is provided in a specification relating to gene
CC sequences and amino acid sequences of Omega-conch toxin (MVIIA) variant
CC polypeptides. The polypeptides may be used for treating pain and nerve
CC cell damage. The methionine at position 12 of natural Omega-conch toxin
CC is changed into alanine, glycine, isoleucine or valine. The genes
CC encoding the Omega-conch toxin and its variant polypeptides are connected
CC serially into a polymer, and the Omega-conch toxin polymer is prepared
CC using a prokaryotic or eukaryotic expression system
XX
SQ Sequence 25 AA;

Query Match          98.0%; Score 148; DB 4; Length 25;
Best Local Similarity 96.0%; Pred. No. 8e-10;
Matches 24; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKKGAKCSRLMYDCTGTCRSGKC 25
   |||||:|||||
DB 1 CKKGAKCSRLLYDCTGTCRSGKC 25

RESULT 35
AAB97044
ID AAB97044 standard; peptide; 25 AA.
XX
AC AAB97044;
XX
DT 20-JUL-2001 (first entry)
XX
DE Omega-conch toxin MVIIA variant polypeptide #4.
XX
KW Omega-conch; toxin; MVIIA; variant; pain; nerve cell damage.
XX
OS Unidentified.
XX
PN CN1280136-A.
XX
PD 17-JAN-2001.
XX
PF 10-JUL-2000; 2000CN-00109828.
XX
PR 10-JUL-2000; 2000CN-00109828.
XX
PA (LIUJ/) LIU J.
XX
PI Liu P, Liu J;
XX
DR WPI; 2001-282466/30.
XX
PT Gene sequence and amino-acid sequence of variant omega-conch toxin
XX polypeptide, their preparation and medicinal use.
XX
PS Claim 4; Page 1 (claims); 16pp; Chinese.
XX
CC The present sequence is provided in a specification relating to gene
CC sequences and amino acid sequences of Omega-conch toxin (MVIIA) variant
CC polypeptides. The polypeptides may be used for treating pain and nerve
CC cell damage. The methionine at position 12 of natural Omega-conch toxin
CC is changed into alanine, glycine, isoleucine or valine. The genes
CC encoding the Omega-conch toxin and its variant polypeptides are connected
CC serially into a polymer, and the Omega-conch toxin polymer is prepared
CC using a prokaryotic or eukaryotic expression system

Query Match          97.4%; Score 147; DB 4; Length 25;
Best Local Similarity 96.0%; Pred. No. 1e-09;
Matches 24; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKKGAKCSRLMYDCTGTCRSGKC 25
   |||||:|||||
DB 1 CKKGAKCSRLLYDCTGTCRSGKC 25

RESULT 36
AAB97045
ID AAB97045 standard; peptide; 25 AA.
XX
AC AAB97045;
XX
DT 20-JUL-2001 (first entry)
XX
DE Omega-conch toxin MVIIA variant polypeptide #5.
XX
KW Omega-conch; toxin; MVIIA; variant; pain; nerve cell damage.
XX
OS Unidentified.
XX
PN CN1280136-A.
XX
PD 17-JAN-2001.
XX
PF 10-JUL-2000; 2000CN-00109828.
XX
PR 10-JUL-2000; 2000CN-00109828.
XX
PA (LIUJ/) LIU J.
XX
PI Liu P, Liu J;
XX
DR WPI; 2001-282466/30.
XX
PT Gene sequence and amino-acid sequence of variant omega-conch toxin
XX polypeptide, their preparation and medicinal use.
XX
PS Claim 5; Page 2 (claims); 16pp; Chinese.
XX
CC The present sequence is provided in a specification relating to gene
CC sequences and amino acid sequences of Omega-conch toxin (MVIIA) variant
CC polypeptides. The polypeptides may be used for treating pain and nerve
CC cell damage. The methionine at position 12 of natural Omega-conch toxin
CC is changed into alanine, glycine, isoleucine or valine. The genes
CC encoding the Omega-conch toxin and its variant polypeptides are connected
CC serially into a polymer, and the Omega-conch toxin polymer is prepared
CC using a prokaryotic or eukaryotic expression system

Query Match          97.4%; Score 147; DB 4; Length 25;
Best Local Similarity 96.0%; Pred. No. 1e-09;
Matches 24; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKKGAKCSRLMYDCTGTCRSGKC 25
   |||||:|||||
DB 1 CKKGAKCSRLLYDCTGTCRSGKC 25

RESULT 37
AAR12544
ID AAR12544 standard; protein; 25 AA.
XX
AC AAR12544;
```

XX	05-SEP-1991 (first entry)	
DT	Omega conotoxin peptide analogue MVIIA(190).	
XX	neuronal calcium-channel antagonist; OCT; adrenaline release;	
XX	neuroprotective.	
KW	Synthetic.	
KW	Key	Location/Qualifiers
XX	Disulfide-bond	1..16
XX	Disulfide-bond	8..20
XX	Disulfide-bond	15..25
XX	Modified-site	25
XX	/label= amidated carboxy terminal	
XX	W09107980-A.	
XX	13-JUN-1991.	
XX	22-NOV-1989; 89US-00440094.	
XX	22-NOV-1989; 89US-00440094.	
XX	(NEUR-) NEUREX CORP.	
XX	Miljanjich GP, Bitner RS, Bowersox SS, Fox JA, Valentino	
XX	Yamashiro DH;	
XX	WPI; 1991-192969/26.	
XX	Compsn. for reducing ischaemia-related neuronal damage - cont	
XX	neuronal channel antagonist omega conotoxin peptide which blo	
XX	norepinephrine release in central nervous system neuronal cel	
XX	Disclosure; Fig 2; 74pp; English.	
XX	MVIIA(190) is an analogue of OCT peptide MVIIA in which an Al	
XX	replaces Lys at position 4. The analogue gave IC(50) for inh	
XX	adrenaline release and Ki values within the ranges of those o	
XX	peptides MVIIA, GVIA, and/or TVIA. It is thus a candidate for	
XX	neuroprotective compound. See also AAR12542-3, AAR12545-7 and	
XX	Sequence 25 AA;	
XX	Query Match 96.0%; Score 145; DB 2; Length 25;	
XX	Best Local Similarity 96.0%; Pred. No. 1.7e-09;	
XX	Matches 24; Conservative 0; Mismatches 1; Indels 0	
QY	1 CKGKAKCSRLMYDCTGSCRSKGC 25	
DB	1 CKGKAKCSRLMYDCTGSCRSKGC 25	
XX	RESULT 38	
XX	AAR13264	
XX	ID AAR13264 standard; protein; 25 AA.	
XX	AAR13264;	
XX	05-SEP-1991 (first entry)	
XX	Omega conotoxin peptide analogue MVIIA(195).	
XX	neuronal calcium-channel antagonist; OCT; adrenaline release;	
XX	neuroprotective.	
XX	Synthetic.	
XX	Key	Location/Qualifiers
XX	Disulfide-bond	1..16
XX	Disulfide-bond	8..20

FT	Disulfide-bond	15. .25	
FT	Modified-site	25	
FT	/label= amidated carboxy terminal		
XX			
XX	WO9107980-A.		
XX			
PD	13-JUN-1991.		
XX			
XX	22-NOV-1989;	89US-00440094.	
XX			
XX	22-NOV-1989;	89US-00440094.	
PR	(NEUR-) NEUREX CORP.		
XX			
XX	Miljanjich GP, Bitner RS, Bowersox SS, Fox JA, Valentino KL;		
PI	Yamashiro DH;		
PI			
XX	WPI; 1991-192969/26.		
DR			
XX			
FT	Compsn. for reducing ischaemia-related neuronal damage - contains		
PT	neuronal channel antagonist omega conotoxin peptide which blocks		
PT	norepinephrine release in central nervous system neuronal cells.		
XX			
FS	Disclosure; Fig 2; 74pp; English.		
XX			
CC	MVIIA(195) is an analogue of OCT peptide MVIIA in which an Ala residue		
CC	replaces Lys at position 24. The analogue gave a Ki value within the		
CC	ranges of those of OCT peptides MVIIA, GVIA, and/or TVIA. It gave an		
CC	IC(50) for inhibition of adrenaline release outside the range for these		
CC	neuroprotective compounds. See also AAR12542-7, and AAR13265-6		
XX			
SQ	Sequence 25 AA;		
	Query Match	96.0%;	Score 145; DB 2; Length 25;
	Best Local Similarity	96.0%;	Pred. No. 1.7e-09;
	Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps		
QY	1 CKKGAKCSRLMYDCCCTGSCRSKGC 25		
DB	1 CKKGAKCSRLMYDCCCTGSCRSKGC 25		
RESULT 39			
AAR12545			
ID	AAR12545 standard; protein; 25 AA.		
XX			
AC	AAR12545;		
XX			
DT	05-SEP-1991 (first entry)		
XX			
DE	Omega conotoxin peptide analogue MVIIA(191).		
XX			
KW	neuronal calcium-channel antagonist; OCT; adrenaline release;		
KW	neuroprotective.		
XX			
OS	Synthetic.		
XX			
FH	Key	Location/Qualifiers	
FT	Disulfide-bond	1. .16	
FT	Disulfide-bond	8. .20	
FT	Disulfide-bond	15. .25	
FT	Modified-site	25	
FT	/label= amidated carboxy terminal		
XX			
XX	WO9107980-A.		
PN			
PD	13-JUN-1991.		
XX			
PF	22-NOV-1989;	89US-00440094.	
XX			
PR	22-NOV-1989;	89US-00440094.	
XX	(NEUR-) NEUREX CORP.		
PA			

XX Miljanich GP, Bitner RS, Bowersox SS, Fox JA, Valentino KL;
 PI Yamashiro DH;
 XX WPI; 1991-192969/26.
 XX Compens. for reducing ischaemia-related neuronal damage - contains
 PT neuronal channel antagonist omega conotoxin peptide which blocks
 PT norepinephrine release in central nervous system neuronal cells.
 XX Disclosure; Fig 2; 74pp; English.
 XX MVIIA(191) is an analogue of OCT peptide MVIIA in which an Ala residue
 CC replaces Lys at position 2. The analogue gave IC(50) for inhibition of
 CC adrenaline release and Ki values within the ranges of those of OCT
 CC peptides MVIIA, GVIA, and/or TWIA. It is thus a candidate for a
 CC neuroprotective compound. See also AAR12542-4, AAR12546-7 and AAR13264-6
 XX Sequence 25 AA;
 SQ Query Match 96.0%; Score 145; DB 2; Length 25;
 Best Local Similarity 96.0%; Pred. No. 1.7e-09;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DB 1 CAGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 40
 AAR39625
 ID AAR39625 standard; peptide; 25 AA.
 XX AC AAR39625;
 XX 25-MAR-2003 (revised)
 DT 20-DEC-1993 (first entry)
 XX SNX-198.
 XX Omega conopeptide; OCT; analgesia; inhibition; voltage-gated;
 KW calcium channel; neurone; contraction; guinea pig; ileum; MVIIA;
 KW binding site; toxin; marine; snail; Conus; opioid; chronic pain;
 KW narcotics.
 XX Synthetic.
 OS Key Location/Qualifiers
 FH Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 FT Modified-site 25
 FT /note= "Amidated C-terminal"
 XX WO9313128-A1.
 PN 08-JUL-1993.
 PD 30-DEC-1992; 92WO-US011349.
 PF 30-DEC-1991; 91US-00814759.
 PR (NEUR-) NEUREX CORP.
 XX Justice A, Singh T, Gohil K, Valentino KL, Miljanich GP;
 PI WPI; 1993-227270/28.
 XX Use of omega-cono-peptide(s) which selectively inhibit voltage-gated
 PT calcium channels - to induce analgesia, enhance opiate analgesics, treat
 PT pain etc.
 XX Claim 1; Fig 2; 90pp; English.

XX The sequences given in AAR39608-30 are omega conopeptides (OCTs) and
 CC derivatives of these, which may be used to produce analgesia in a mammal.
 CC These OCTs inhibit voltage-gated calcium channels selectively in neuronal
 CC tissue. This is shown by the peptides ability to stimulate contraction in
 CC guinea pig ileum and to bind to OCT MVIIA binding sites present in
 CC neuronal tissue. OCTs are components of peptide toxins derived from
 CC marine snails of the genus Conus, and act as calcium channel blockers.
 CC These OCTs may be used to replace opioids in the treatment of chronic pain
 CC or to reduce the opioid dosage required. This helps to reduce dependence
 CC on and tolerance to opioid narcotics. (Updated on 25-MAR-2003 to correct
 CC PN field.)
 XX Sequence 25 AA;
 SQ Query Match 96.0%; Score 145; DB 2; Length 25;
 Best Local Similarity 96.0%; Pred. No. 1.7e-09;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 41
 AAR39618
 ID AAR39618 standard; peptide; 25 AA.
 XX AC AAR39618;
 XX 25-MAR-2003 (revised)
 DT 20-DEC-1993 (first entry)
 XX SNX-190.
 XX Omega conopeptide; OCT; analgesia; inhibition; voltage-gated;
 KW calcium channel; neurone; contraction; guinea pig; ileum; MVIIA;
 KW binding site; toxin; marine; snail; Conus; opioid; chronic pain;
 KW narcotics.
 XX Synthetic.
 OS Key Location/Qualifiers
 FH Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 FT Modified-site 25
 FT /note= "Amidated C-terminal"
 XX WO9313128-A1.
 PN 08-JUL-1993.
 PD 30-DEC-1992; 92WO-US011349.
 PF 30-DEC-1991; 91US-00814759.
 PR (NEUR-) NEUREX CORP.
 XX Justice A, Singh T, Gohil K, Valentino KL, Miljanich GP;
 PI WPI; 1993-227270/28.
 XX Use of omega-cono-peptide(s) which selectively inhibit voltage-gated
 PT calcium channels - to induce analgesia, enhance opiate analgesics, treat
 PT pain etc.
 XX Claim 1; Fig 2; 90pp; English.

XX The sequences given in AAR39608-30 are omega conopeptides (OCTs) and
 CC derivatives of these, which may be used to produce analgesia in a mammal.
 CC These OCTs inhibit voltage-gated calcium channels selectively in neuronal
 CC tissue. This is shown by the peptides ability to stimulate contraction in

The sequences given in AAR39608-30 are omega conopeptides (OCTs) and derivatives of these, which may be used to produce analgesia in a mammal. These OCTs inhibit voltage-gated calcium channels selectively in neuronal tissue. This is shown by the peptides ability to stimulate contraction in guinea pig ileum and to bind to OCT MW1A binding sites present in neuronal tissue. OCTs are components of peptide toxins derived from marine snails of the genus *Conus*, and act as calcium channel blockers. These OCTs may be used to replace opioids in the treatment of chronic pain or to reduce the opiod dosage required. This helps to reduce dependence on and tolerance to opiod narcotics. (Updated on 25-MAR-2003 to correct PN field.)

SQ Sequence 25 AA;

Query Match 96.0%; Score 145; DB 2; Length 25;
 Best Local Similarity 96.0%; Pred. No. 1.7e-09;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

OY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 44

AAR39619
 ID AAR39619 standard; peptide; 25 AA.
 XX
 AC AAR39619;
 XX
 DT 25-MAR-2003 (revised)
 DT 20-DEC-1993 (first entry)
 XX
 DE SNX-191.
 XX
 KW Omega conopeptide; OCT; analgesia; inhibition; voltage-gated;
 KW calcium channel; neuron; contraction; guinea pig; ileum; MVIIA;
 KW binding site; toxin; marine; snail; Conus; opiod; chronic pain;
 KW narcotics.
 XX
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 FT Modified-site 25
 FT /note= "Amidated C-terminal"
 XX
 PN WO9313128-A1.
 XX
 PD 08-JUL-1993.
 XX
 PF 30-DEC-1992; 92WO-US011349.
 XX
 PR 30-DEC-1991; 91US-00814759.
 XX
 PA (NEUR-) NEUREX CORP.
 XX
 PI Justice A, Singh T, Gohil K, Valentino KL, Miljanich GP;
 XX WPI; 1993-227270/28.
 XX
 PT Use of omega-cono-peptide(s) which selectively inhibit voltage-gated
 PT calcium channels - to induce analgesia, enhance opiate analgesics, treat
 PT pain etc.
 XX
 PS Claim 1; Fig 2; 90pp; English.
 XX
 CC The sequences given in AAR39608-30 are omega conopeptides (OCTs) and
 CC derivatives of these, which may be used to produce analgesia in a mammal.
 CC These OCTs inhibit voltage-gated calcium channels selectively in neuronal
 CC tissue. This is shown by the peptides ability to stimulate contraction in
 CC guinea pig ileum and to bind to OCT MVIIA binding sites present in
 CC neuronal tissue. OCTs are components of peptide toxins derived from
 CC marine snails of the genus Conus, and act as calcium channel blockers.
 CC These OCTs may be used to replace opiods in the treatment of chronic pain
 CC or to reduce the opiod dosage required. This helps to reduce dependence
 CC on and tolerance to opiod narcotics. (Updated on 25-MAR-2003 to correct
 CC FN field.)
 XX
 SQ Sequence 25 AA;

Query Match 96.0%; Score 145; DB 2; Length 25;
 Best Local Similarity 96.0%; Pred. No. 1.7e-09;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

OY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DB 1 CAGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 45

AAR39626
 ID AAR39626 standard; peptide; 25 AA.
 XX
 AC AAR39626;
 XX
 DT 25-MAR-2003 (revised)
 DT 20-DEC-1993 (first entry)
 XX
 DE SNX-200.
 XX
 KW Omega conopeptide; OCT; analgesia; inhibition; voltage-gated;
 KW calcium channel; neuron; contraction; guinea pig; ileum; MVIIA;
 KW binding site; toxin; marine; snail; Conus; opiod; chronic pain;
 KW narcotics.
 XX
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 FT Modified-site 25
 FT /note= "Amidated C-terminal"
 XX
 PN WO9313128-A1.
 XX
 PD 08-JUL-1993.
 XX
 PF 30-DEC-1992; 92WO-US011349.
 XX
 PR 30-DEC-1991; 91US-00814759.
 XX
 PA (NEUR-) NEUREX CORP.
 XX
 PI Justice A, Singh T, Gohil K, Valentino KL, Miljanich GP;
 XX WPI; 1993-227270/28.
 XX
 PT Use of omega-cono-peptide(s) which selectively inhibit voltage-gated
 PT calcium channels - to induce analgesia, enhance opiate analgesics, treat
 PT pain etc.
 XX
 PS Claim 1; Fig 2; 90pp; English.
 XX
 CC The sequences given in AAR39608-30 are omega conopeptides (OCTs) and
 CC derivatives of these, which may be used to produce analgesia in a mammal.
 CC These OCTs inhibit voltage-gated calcium channels selectively in neuronal
 CC tissue. This is shown by the peptides ability to stimulate contraction in
 CC guinea pig ileum and to bind to OCT MVIIA binding sites present in
 CC neuronal tissue. OCTs are components of peptide toxins derived from
 CC marine snails of the genus Conus, and act as calcium channel blockers.
 CC These OCTs may be used to replace opiods in the treatment of chronic pain
 CC or to reduce the opiod dosage required. This helps to reduce dependence
 CC on and tolerance to opiod narcotics. (Updated on 25-MAR-2003 to correct
 CC FN field.)
 XX
 SQ Sequence 25 AA;

Query Match 96.0%; Score 145; DB 2; Length 25;
 Best Local Similarity 96.0%; Pred. No. 1.7e-09;
 Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

OY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DB 1 CAGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 46

AAR37763
ID AAR37763 standard; peptide; 25 AA.
XX AC AAR37763;
XX AC AAR37763;
DT 25-MAR-2003 (revised)
DT 08-SEP-1993 (first entry)
XX SNX-190.
XX Ischaemia; neuronal; omega-conotoxin; OCT; MVIIA; MVIIC; MVIID; MVIIB;
KW GVIA; GVIIA; RVIA; SVIA; TVIA; SVIB; SNX-207; stroke; delayed treatment;
KW antihistamine; blood pressure; N-type voltage-gated Ca currents;
KW N-channel mediated neurotransmitter release.
XX OS Synthetic.
XX FH Key Location/Qualifiers
FT Disulfide-bond 1. .16
FT Disulfide-bond 8. .20
FT Disulfide-bond 15. .25
XX PN WO9310145-A1.
XX PD 27-MAY-1993.
XX PF 12-NOV-1992; 92WO-US009766.
XX PR 12-NOV-1991; 91US-00789913.
XX PR 17-JUL-1992; 92US-00916478.
XX PA (NEUR-) NEUREX CORP.
XX PI Miljanich GP, Bowersox SS, Fox JA, Valentino KL, Bitner RS;
XX PI Yamashiro DH;
XX DR WPI; 1993-182487/22.
XX Redn. of neuronal damage caused by ischaemia - by admin. of cpds. that
PT bind specifically to omega-conotoxin MVIIA binding sites.
XX PS Disclosure; Fig 2; 103pp; English.
XX The C-terminal is amidated. Ischaemia-related neuronal damage in mammals
CC is reduced by admin., 4-24 hr after onset of ischaemia, of a cpd. (I)
CC which binds selectively to an omega-conotoxin (OCT) MVIIA site in
CC neuronal tissue. (I) has selectivity at least 100 expressed as ratio of
CC binding affinity for the MVIIA site to that for the MVIIC site. (I) is
CC one of the OCTs MVIIA, MVIIB, GVIA, GVIIA or RVIA or it is the cpd. SNX-
CC 207. (I) is esp. used to reduce neuronal damage caused by stroke. By
CC delaying admin. for some time (compare US051403 where cpds. are given
CC within 1 hr of the onset of ischaemia) a greater redn. in neuronal damage
CC is achieved. (I) is admin. e.g. by intracerebroventricular (ICV)
CC injection at 0.1-20 microg/kg, but can also be given i.v. (opt. after
CC treatment with antihistamines to minimise redn. in blood pressure caused
CC by (I)). (I) is also at least as effective as the specified conotoxins
CC for (1) selective inhibition of N-type voltage-gated Ca currents in
CC neuronal tissue and (2) selective inhibition of N-channel mediated
CC neurotransmitter release in neuronal tissue. Primary sequences of omega-
CC conopeptides are given in AAR37752-62. Several analog omega-conopeptides
CC are given in AAR37763-76. (Updated on 25-MAR-2003 to correct PN field.)
XX SQ Sequence 25 AA;

Query Match 96.0%; Score 145; DB 2; Length 25;
Best Local Similarity 96.0%; Pred. No. 1.7e-09;
Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
QY 1 CKGKAKCSRLMYDCTGSCRSKGC 25
Db 1 CKGKAKCSRLMYDCTGSCRSKGC 25

RESULT 47

AAR37771
ID AAR37771 standard; peptide; 25 AA.
XX AC AAR37771;
XX AC AAR37771;
DT 25-MAR-2003 (revised)
DT 08-SEP-1993 (first entry)
XX SNX-200.
XX Ischaemia; neuronal; omega-conotoxin; OCT; MVIIA; MVIIC; MVIID; MVIIB;
KW GVIA; GVIIA; RVIA; SVIA; TVIA; SVIB; SNX-207; stroke; delayed treatment;
KW antihistamine; blood pressure; N-type voltage-gated Ca currents;
KW N-channel mediated neurotransmitter release.
XX OS Synthetic.
XX FH Key Location/Qualifiers
FT Disulfide-bond 1. .16
FT Disulfide-bond 8. .20
FT Disulfide-bond 15. .25
XX PN WO9310145-A1.
XX PD 27-MAY-1993.
XX PF 12-NOV-1992; 92WO-US009766.
XX PR 12-NOV-1991; 91US-00789913.
XX PR 17-JUL-1992; 92US-00916478.
XX PA (NEUR-) NEUREX CORP.
XX PI Miljanich GP, Bowersox SS, Fox JA, Valentino KL, Bitner RS;
XX PI Yamashiro DH;
XX DR WPI; 1993-182487/22.
XX Redn. of neuronal damage caused by ischaemia - by admin. of cpds. that
PT bind specifically to omega-conotoxin MVIIA binding sites.
XX PS Disclosure; Fig 2; 103pp; English.
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CC 207. (I) is esp. used to reduce neuronal damage caused by stroke. By
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CC is achieved. (I) is admin. e.g. by intracerebroventricular (ICV)
CC injection at 0.1-20 microg/kg, but can also be given i.v. (opt. after
CC treatment with antihistamines to minimise redn. in blood pressure caused
CC by (I)). (I) is also at least as effective as the specified conotoxins
CC for (1) selective inhibition of N-type voltage-gated Ca currents in
CC neuronal tissue and (2) selective inhibition of N-channel mediated
CC neurotransmitter release in neuronal tissue. Primary sequences of omega-
CC conopeptides are given in AAR37752-62. Several analog omega-conopeptides
CC are given in AAR37763-76. (Updated on 25-MAR-2003 to correct PN field.)
XX SQ Sequence 25 AA;

Query Match 96.0%; Score 145; DB 2; Length 25;
Best Local Similarity 96.0%; Pred. No. 1.7e-09;
Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
QY 1 CKGKAKCSRLMYDCTGSCRSKGC 25
Db 1 CKGKAKCSRLMYDCTGSCRSKGC 25

Db 1 CKGKGACSRMLMYDCTGSCRSKGC 25

RESULT 48

AAR37767
ID AAR37767 standard; peptide; 25 AA.

XX
AC AAR37767;

XX 25-MAR-2003 (revised)

DT 08-SEP-1993 (first entry)

XX
DE SNX-195.

XX Ischaemia; neuronal; omega-conotoxin; OCT; MWIIA; MVIIC; MVIID; MVIIB;
KW GVIA; GVIIA; RVIA; SVIA; TWIA; SVIB; SNX-207; stroke; delayed treatment;
KW antihistamine; blood pressure; N-type voltage-gated Ca currents;
KW N-channel mediated neurotransmitter release.

XX Synthetic.

XX Key Location/Qualifiers

FT Disulfide-bond 1. .16

FT Disulfide-bond 8. .20

FT Disulfide-bond 15. .25

XX WO9310145-A1.

XX 27-MAY-1993.

XX 12-NOV-1992; 92WO-US009766.

XX 12-NOV-1991; 91US-00789913.

PR 17-JUL-1992; 92US-00916478.

XX (NEUR-) NEUREX CORP.

XX Miljanich GP, Bowersox SS, Fox JA, Valentino KL, Bitner RS;

PI Yamashiro DH;

XX WPI; 1993-182487/22.

XX Redn. of neuronal damage caused by ischaemia - by admin. of cpds. that

PT bind specifically to omega-conotoxin MWIIA binding sites.

XX Disclosure; Fig 2; 103pp; English.

XX The C-terminal is amidated. Ischaemia-related neuronal damage in mammals
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CC which binds selectively to an omega-conotoxin (OCT) MWIIA site in
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CC binding affinity for the MWIIA site to that for the MVIIC site. (I) is
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CC 207. (I) is esp. used to reduce neuronal damage caused by stroke. By
CC delaying admin. for some time (compare US051403 where cpds. are given
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CC is achieved. (I) is admin. e.g. by intracerebroventricular (ICV)
CC injection at 0.1-20 microg/kg, but can also be given i.v. (opt. after
CC treatment with antihistamines to minimise redn. in blood pressure caused
CC by (I)). (I) is also at least as effective as the specified conotoxins
CC for (1) selective inhibition of N-type voltage-gated Ca currents in
CC neuronal tissue and (2) selective inhibition of N-channel mediated
CC neurotransmitter release in neuronal tissue. Primary sequences of omega-
CC conopeptides are given in AAR37752-62. Several analog omega-conopeptides
CC are given in AAR37763-76. (Updated on 25-MAR-2003 to correct PN field.)

XX Sequence 25 AA;

Query Match

Best Local Similarity 96.0%; Score 145; DB 2; Length 25;

Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 CKGKGACSRMLMYDCTGSCRSKGC 25

Db 1 CKGKGACSRMLMYDCTGSCRSKGC 25

RESULT 49

AAR37766

ID AAR37766 standard; peptide; 25 AA.

XX AAR37766;

XX 25-MAR-2003 (revised)

DT 08-SEP-1993 (first entry)

XX SNX-194.

XX Ischaemia; neuronal; omega-conotoxin; OCT; MWIIA; MVIIC; MVIID; MVIIB;
KW GVIA; GVIIA; RVIA; SVIA; TWIA; SVIB; SNX-207; stroke; delayed treatment;
KW antihistamine; blood pressure; N-type voltage-gated Ca currents;
KW N-channel mediated neurotransmitter release.

XX Synthetic.

XX Key Location/Qualifiers

FT Disulfide-bond 1. .16

FT Disulfide-bond 8. .20

FT Modified-site 12 /label= NLE

FT Disulfide-bond 15. .25

XX WO9310145-A1.

XX 27-MAY-1993.

XX 12-NOV-1992; 92WO-US009766.

XX 12-NOV-1991; 91US-00789913.

PR 17-JUL-1992; 92US-00916478.

XX (NEUR-) NEUREX CORP.

XX Miljanich GP, Bowersox SS, Fox JA, Valentino KL, Bitner RS;

PI Yamashiro DH;

XX WPI; 1993-182487/22.

XX Redn. of neuronal damage caused by ischaemia - by admin. of cpds. that

PT bind specifically to omega-conotoxin MWIIA binding sites.

XX Disclosure; Fig 2; 103pp; English.

XX The C-terminal is amidated. Ischaemia-related neuronal damage in mammals
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CC neuronal tissue. (I) has selectivity at least 100 expressed as ratio of
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CC one of the OCTs MWIIA, MVIIB, GVIA, GVIIA or RVIA or it is the cpd. SNX-
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CC delaying admin. for some time (compare US051403 where cpds. are given
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CC neuronal tissue and (2) selective inhibition of N-channel mediated
CC neurotransmitter release in neuronal tissue. Primary sequences of omega-
CC conopeptides are given in AAR37752-62. Several analog omega-conopeptides
CC are given in AAR37763-76. (Updated on 25-MAR-2003 to correct PN field.)

XX Sequence 25 AA;

Query Match

Best Local Similarity 96.0%; Score 145; DB 2; Length 25;

Query Match 96.0%; Score 145; DB 2; Length 25;

Best Local Similarity 96.0%; Pred. No. 1.7e-09;

Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
|||||

Db 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
|||||

RESULT 50

AAR37764
ID AAR37764 standard; peptide; 25 AA.

XX AAR37764;

XX 25-MAR-2003 (revised)

DT 08-SEP-1993 (first entry)

XX SNX-191.

XX Ischaemia; neuronal; omega-conotoxin; OCT; MVIIA; MVIIC; MVIID; MVIIB;
KW GVIA; GVIA; RVIA; SVIA; TVIA; SVIB; SNX-207; stroke; delayed treatment;
KW antihistamine; blood pressure; N-type voltage-gated Ca currents;
KW N-channel mediated neurotransmitter release.

XX Synthetic.

XX Key Location/Qualifiers

FT Disulfide-bond 1..16

FT Disulfide-bond 8..20

FT Disulfide-bond 15..25

XX WO9310145-A1.

PN 27-MAY-1993.

XX 12-NOV-1992; 92WO-US0009766.

XX 12-NOV-1991; 91US-00789913.

PR 17-JUL-1992; 92US-00916478.

XX (NEUR-) NEUREX CORP.

PI Miljanich GP, Bowersox SS, Fox JA, Valentino KL, Bitner RS;

PI Yamashiro DH;

XX WPI; 1993-182487/22.

XX Redn. of neuronal damage caused by ischaemia - by admin. of cpds. that

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XX Disclosure; Fig 2; 103pp; English.

XX The C-terminal is amidated. Ischaemia-related neuronal damage in mammals
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CC treatment with antihistamines to minimise redn. in blood pressure caused
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CC for (1) selective inhibition of N-type voltage-gated Ca currents in
CC neuronal tissue and (2) selective inhibition of N-channel mediated
CC neurotransmitter release in neuronal tissue. Primary sequences of omega-
CC conopeptides are given in AAR37752-62. Several analog omega-conopeptides
CC are given in AAR37763-76. (Updated on 25-MAR-2003 to correct PN field.)

XX Sequence 25 AA;

Query Match

96.0%; Score 145; DB 2; Length 25;

Best Local Similarity 96.0%; Pred. No. 1.7e-09;
Matches 24; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
|||||

Db 1 CAGKGAKCSRLMYDCTGSCRSKGC 25
|||||

Search completed: March 28, 2005, 16:39:26
Job time : 67.6667 secs